

# THE BULLETIN



BRITISH  
ECOLOGICAL  
SOCIETY

## SUMMER '18

Watch out for our next issue where we will report on our two summer schools – the Undergraduate Summer School and the A-level Summer School.

*A-Level Summer School - 30 students from low-income, BAME and first-in-family backgrounds joined us for a week of ecology, research and inspiration. Many thanks to everyone who offered their time and funding to support the school!*



*'I've always wanted to do biology but I didn't know what in biology I would pursue. Being here has shown me I want to do conservation, I want to do ecology and fieldwork. Now I have more to talk to my parents about, they're very "iffy" on biology and now I feel like I can confidently say this is what I want to do, this is why I want to do it and there's loads of opportunities' – Saniya*



*An arthropod disco – Prof. Simon Leather and Dr Francisca Sconce demonstrated how fluorescent powders and UV lights can be used to investigate invertebrate dispersal*



*Undergraduate Summer School - 50 undergraduates spent a week with us at Malham Tarn FSC centre in the Yorkshire Dales. Our students got hands-on experience of many ecological career directions: from aquatic mammal surveys to cave-system conservation!*

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SEPTEMBER 2018

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We welcome all ideas.  
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## WELCOME

# LISTEN UP!



Kate Harrison | Editor | bulletin@britishecologicalsociety.org

Bulletins aren't generally themed, but as the copy starts rolling in, common strands start to appear. Listening has emerged as a thread in this issue. What can we learn if we spend more time listening to the environment and to each other?

Chris Watson, one of the world's leading recorders of wildlife and natural phenomena, is interviewed by Rory Gibb on p16. They discuss changing soundscapes and the importance of listening as an act of bearing witness to changes in the natural world.

Dara McAnulty, a 14-year-old conservationist from Northern Ireland, raised the roof at our symposium in Manchester (p12), talking about the work and passion of young people, which is overlooked by most of us – if we listened more and gave agency to these voices, what could we achieve? Listening is key, both to breaking down the power relations which underlie conservation conflicts, and to engaging everyone with nature.

Two members from the Accessibility Network have shared their personal experiences of mental health issues at work (p51) and our LGBT Network has now been launched – personal stories from the community are published on our website. As a bi woman who has been diagnosed with depression and anxiety, I know from experience how important it is to create space for these discussions, and I look forward to publishing more in future issues. When people are generous with sharing their personal stories, we can reciprocate by being generous in listening.

So I hope this issue inspires you to take some time out and listen – to the sounds of the environment around you, or to your friend or colleague who needs a kind ear. Who knows what you'll learn.

Kate Harrison

## BULLETIN MCBULLETINFACE – READERSHIP SURVEY OUTCOMES

Thank you to everyone who participated in our readership survey – we have listened! Here is some of what's happening:

- **#plasticfree** – we've finally ditched the plastic. Your Bulletins are now sent in paper envelopes.
- **Opt out of receiving paper copies** – this will soon be an option. We need to make changes to our membership database which is fiddly and time-consuming so bear with us. PDF versions are already available in the members' area, and issues older than 12 months are publicly available on our website.
- **Lighter paper** – from the December issue onwards we will print on lighter paper. This will reduce its environmental impact and make it easier to lie the magazine flat so you can read hands-free.
- **More consistency, but flexibility in covering diverse topics** – we are creating a more consistent page layout so you'll know exactly where to turn in each issue for e.g. policy briefings, or event reports. We will carry on publishing summaries of latest research and on topics unique to our community which don't have a space in traditional journals.
- **No more financial reports** – this is the last issue with accounts printed in full! To commemorate – the first person to email me with the correct answer to the following question wins a prize: By how much did the BES' depreciation expenditure change between 2016 and 2017?
- **More member stories** – see p47.
- **Bring back Bogbean Bennett** – no. But we have a fantastic new comic by Holly McKelvey, see p61. (To our more recent members, Bogbean Bennett was a regular cartoon back in the 80s!)
- **The name** – at the time of going to press no decision has been reached. A lot of you like 'The Bulletin' but as we grow as an organisation and become more outward-facing, the current name doesn't say much to someone who sees a copy in their staff room or round their friend's house. The Bulletin has potential to be a tool for outreach and we need a name which hints at what people are going to learn when they look inside.

## PRESIDENT'S PIECE

# THIS HAS BEEN QUITE A SUMMER



Richard Bardgett | President of the British Ecological Society | richard.bardgett@manchester.ac.uk

As I write, the United Kingdom, like many parts of northern Europe, is in one of the longest periods of drought for decades. Fields are parched, trees are shedding leaves, reservoirs are dried up, soil is baked dry, and a hosepipe ban has just been issued in the northwest of England, which is usually one of the wettest parts of the country.

While the prolonged high temperatures and blue skies have been a joy for many, they have also put ecology in focus: extreme weather events, such as heat waves and droughts, are expected to become more frequent and intense in the future, and present a major threat to the biodiversity and functioning of our planet.

There are many unknowns about how climate extremes impact terrestrial and aquatic ecosystems. But evidence is mounting that effects can be severe and long lasting. For example, recurring droughts are causing declines in tree growth and increases in tree mortality in many regions of the world, with consequences for forest biodiversity and the global carbon cycle. Heat waves can trigger dramatic transitions in reef communities, fundamentally altering ocean ecological processes, and belowground, effects of extreme drought on soil organisms can be severe and prolonged. Drought also has enormous economic costs. I visited Inner Mongolia earlier this summer, where a prolonged drought, on top of one the previous year, is causing major economic losses for herders through its impact on livestock.



*Prolonged summer drought in Inner Mongolia is causing major economic losses for herders through its impact on grasslands and livestock*  
© Richard Bardgett

You only need to look at recent issues of the BES journals to see how ecological science can contribute to our understanding of the impacts of climate extremes and their mitigation. The latest issue of *Functional Ecology* (32:7, 2018), for example, has a Special Feature on global change ecology (Fox *et al.* 2018), which includes a series of fascinating papers exploring the mechanisms underlying

how organisms, communities and ecosystems respond to global change, including changing weather patterns (e.g. Griffin-Nolan *et al.* 2018). And in *Journal of Ecology*, we recently published a series of papers looking at different aspects of climate extremes, including impacts on species coexistence (Matias *et al.* 2018) and a critical synthesis on the stabilising effects of plant diversity on ecosystem

function under climate extremes (De Boeck *et al.* 2018).

The topic of climate variability is also considered in *Journal of Animal Ecology*, with a recent paper by Linton and McDonald (2018) showing that changing spring weather conditions influence the breeding phenology and reproductive success in sympatric bat populations. Based on this finding, the authors argue that improved understanding of the impact of climate extremes during critical periods (e.g. spring for reproductive bats) is crucial for improving predictions of the likely impact of climate change on the stability and conservation of wild populations. In the same journal, a fascinating paper by Moore *et al.* (2018) demonstrates the crucial importance for desert lizards of underground burrow systems for buffering current and future extremes of temperate and desiccation, which is also of importance for the management of these endangered species.

The issue of drought also featured in recent issues of *Journal of Applied Ecology*. A study by Selwood *et al.* (2018) demonstrated that bird assemblages in locations with high productivity vegetation (measured using remotely sensed vegetation greenness) are more resistant to severe drought. This suggests that prioritising conservation efforts on high productivity vegetation could be an effective strategy for protecting bird assemblages against extreme drought. But also it demonstrates the effectiveness of using remotely sensed vegetation greenness as a means to identify drought refuges for birds and possibly other biota. In the same issue, Balachowski and Volaire (2018) also consider drought, exploring trade-offs associated with drought tolerance in populations of the perennial grass *Elymus glaucus*, which they argue need to be considered in future grassland restoration programmes.

The most recent issue of *Methods in Ecology and Evolution* (9:8) also includes papers of relevance to climate extremes as part of a Special Feature on improving biodiversity monitoring using satellite remote sensing (Luque *et al.* 2018). And finally, recent papers in *Ecology and Evolution* also focus on drought: Guyer *et al.* (2018)

consider the influence of drought on plant performance via altered multitrophic interactions, involving root herbivores and their natural enemies; and Amorim *et al.* (2018) highlight the critical importance of permanently flowing watercourses for bat conservation in Mediterranean landscapes, and the risk imposed by their degradation through prolonged drought and water abstraction.

These are just a few of many studies that illustrate the importance of ecology for understanding impacts of climate extremes and the development of strategies to protect organisms and ecosystems against them. But they also illustrate that all of our journals are at the forefront of addressing major global environmental challenges through the publication of the highest quality ecological science. The capacity of ecosystems to resist and recover from climate extremes is also of fundamental importance for society, which strongly relies on their ability to supply ecosystem services; as such, I suspect papers on climate extremes will also populate the pages of our new journal *People and Nature*.

The current drought will end at some point. But its ecological and societal impacts could be long-lasting. As mentioned above, climate scientists predict that climate extremes will become more frequent and severe. Given this, ecologists need to put more focus on understanding the risks of climate extremes, including why some organisms and ecosystems are more vulnerable than others, and to use this knowledge to develop strategies to protect them.

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*Drought shelters in the Yorkshire Dales, northern England, being used to explore impacts of prolonged drought on soil organisms and processes*

© Richard Bardgett

## LATEST RESEARCH

Functional Ecology



### GREEN SEA TURTLE DIGGING ITS OWN WATERY GRAVE

A seagrass species from the Red Sea is outcompeting the native seagrass species in the Caribbean, where the green sea turtle lives. These iconic turtles are seeing their grazing areas decline because they have little interest in the foreign seagrass.

The invasive seagrass *Halophila stipulacea*, once isolated in the Red Sea, made its way to the Mediterranean after the opening of the Suez Canal in 1892. The seagrass reached the eastern Caribbean by ship in 2002, where it turned out to be dominant over the native seagrass, *Thalassia testudinum*. The foreign seagrass spread quickly across the eastern Caribbean and formed thick meadows in the foraging areas of green sea turtles. Researchers from the Netherlands conducted field observations, experiments in underwater cages, and gathered satellite images of grazing areas from the last 40 years in order to compare the size and boundaries of the seagrass fields with their current condition. Their findings provide the first proof that large herbivores play a significant role in the expansion of invasive plant species in aquatic ecosystems. (*Journal of Ecology*, doi.org/csfr)



### WATCHING CYCLING RACES TO STUDY CLIMATE CHANGE

Analysing nearly four decades of archive footage from the Tour of Flanders, researchers from Ghent University have been able to detect climate change impacts on trees. The research team, led by Prof. Pieter De Frenne found that the trees had advanced the timing of leafing and flowering in response to recent temperature changes. Television footage of cycling races lends itself well to research as these have relatively fixed routes and are organised around the globe, providing an opportunity to study a diverse range of species and locations that are currently understudied. (*Methods in Ecology and Evolution*, doi.org/crsz)



© Stephanie Jenouvrier, Woods Hole Oceanographic Institution

### RISING SEA TEMPERATURES THREATEN SURVIVAL OF JUVENILE ALBATROSS

Changes in sea surface temperature affect the survival of albatross during their first year at sea, resulting in a reduced population growth rate when temperatures are warmer than the current average, a new study published in the *Journal of Animal Ecology* has revealed. 'Sea surface temperature is widely used as an indicator of food availability for marine predators because warmer temperatures usually result in lower primary productivity in marine ecosystems, ultimately reducing the availability of prey', said Dr Stéphanie Jenouvrier, a seabird ecologist at Woods Hole Oceanographic Institution. (*Journal of Animal Ecology* doi.org/gdrwhg)

### INVASIVE GREY SQUIRRELS CAUSES INCREASED CHRONIC STRESS IN NATIVE RED SQUIRRELS

Researchers from Italy, Austria and the US found that grey squirrels cause an increase in the levels of glucocorticoid stress hormones in native Eurasian red squirrels. For red squirrels, the natural situation is to be the only diurnal tree-dwelling mammal in woodlands however when the grey squirrel, colonises these habitats, it acts as a true environmental stressor. Overall lower food intake and chronically increased concentrations of glucocorticoids caused by the presence of grey squirrels produce a reduction in body growth and reduce reproduction among the red squirrels. In the end, smaller size, lower fertility, and reduced recruitment of juvenile red squirrels will lead to the extinction of the population in few years' time. (*Journal of Animal Ecology*, doi.org/csfg)



Ambrogio Molinari, University of Insubria

### ASSESSING THE IMPACT OF UNDERWATER NOISE

With human activity increasing, ocean noise is affecting more wildlife, big and small. In their recent *Journal of Applied Ecology Practitioner's Perspective*, Rebecca Faulkner and colleagues present a framework of key principles for assessing the impacts of underwater noise. Read more about the team's practical solutions for tackling this growing marine concern for free: doi.org/csfn.

Journal of Ecology

Methods in Ecology and Evolution

Journal of Animal Ecology

Journal of Applied Ecology



### EMINENT ECOLOGIST 2018

The *Journal of Ecology* editors have announced that this year David Wardle will be honoured in the journal's continuing Eminent Ecologist series. You can read about David's career and work on the *Journal of Ecology* blog and in a special virtual issue on the journal website.

### BIOTIC CONTROLS OF PLANT COEXISTENCE

Issue 106:5 of *Journal of Ecology* includes a Special Feature edited by Ignasi Bartomeus and Oscar Godoy titled 'Biotic controls of plant coexistence'. The studies presented provide a solid base to explore how mutualistic and antagonistic interactions act upon the determinants of plant species competition. The advances made in these papers will serve to pave the road for a better theoretical and empirical understanding of how biotic interactions control biodiversity.

### IMPROVING BIODIVERSITY MONITORING FOR CONSERVATION

Issue 9:3 of *Methods in Ecology and Evolution* includes a special feature titled 'Improving biodiversity monitoring for conservation,' edited by Sandra Luque, Nathalie Pettorelli, Petteri Vihervaara and Martin Wegmann. The special feature focuses on three key conservation challenges:

1. Monitoring biodiversity
2. Developing an improved understanding of biodiversity patterns
3. Assessing biodiversity's vulnerability to climate change.

The set of papers in this special feature provide operational concrete examples of management-relevant, satellite-based methodologies that are technically feasible, economically viable and sustainable in time.

### STATISTICAL ECOLOGY

Statistical and quantitative methods within ecology have increased substantially in recent years. This rise can be attributed both to the growing need to address global environmental change issues, as well as the increase in data sources to address these challenges. In a new cross-journal Virtual Issue, Laura Graham and Susan Jarvis compiled a set of papers encompass the wide range of ecological disciplines that have benefited from new statistical methods including movement ecology, disease ecology, spatial ecology, quantitative genetics and more. [besjournals.onlinelibrary.wiley.com/hub/statisticaecology2018](http://besjournals.onlinelibrary.wiley.com/hub/statisticaecology2018)

### OPEN CALL FOR PAPERS: SPECIAL FEATURE ON BIOLOGGING

Do you study animal movement and behaviour with biologgers or tags? *Journal of Animal Ecology* has a new Open Call for papers for a Special Feature on Biologging. We are looking for submissions using:

- Positional loggers (GPS, GLS, Satellite)
- Animal-mounted video cameras
- In-vivo physiology
- Accelerometer data
- Proximity data loggers
- Machine learning and big data

Visit [bit.ly/biologging\\_or\\_email\\_admin@journalofanimalecology.org](http://bit.ly/biologging_or_email_admin@journalofanimalecology.org). Deadline 20 September 2018.

### SHOWCASING THE BEST RESEARCH IN TROPICAL BIODIVERSITY MANAGEMENT

Focusing on policy recommendations and guidelines, *Journal of Applied Ecology* brings together a Virtual Issue dedicated to the management of tropical biodiversity. This selection

of papers, collated by Matthew Struebig and Cristina Banks-Leite showcases recent research into ecosystem services, communities and species across the world's tropical regions. Read the issue here: [bit.ly/TropicalBiodiversity](http://bit.ly/TropicalBiodiversity)

### ONLINE-ONLY IN 2019

From January 2019, *Journal of Applied Ecology* and *Journal of Animal Ecology* are moving online-only. Like our sister journals, *Functional Ecology* and *Methods in Ecology and Evolution*, we'll be publishing up-to-date research more regularly as we increase to 12 online issues per year.

### THE SIDNIE MANTON AWARD

The *Journal of Animal Ecology* Sidnie Manton Award is open for proposals. The award aims to inspire early career researchers working on any aspect of animal ecology to publish review or synthesis papers that either summarize their dissertation work, provide new insights into classic areas of animal ecology, or shed light on emerging fields. To enter, submit an abstract of your proposed paper by Friday 7 September. [bit.ly/2018SidnieManton](http://bit.ly/2018SidnieManton).



Photo provided by Elizabeth Clifford

## LATEST RESEARCH



### PAINTED LADY'S ROUNDTrip MIGRATORY FLIGHT IS LONGEST RECORDED IN BUTTERFLIES

Previously known to migrate from Europe to the Afrotropics during the autumn, the fate of this butterfly species and its offspring remained unknown. A British Ecological Society funded study found that painted lady butterflies return from the Afrotropical region to recolonise the Mediterranean in early spring, travelling an annual distance of 12,000 km across the Sahara Desert. While the Palearctic-African migratory circuit is typically associated with birds, scientists from Spain, found that the Painted Lady (*Vanessa cardui*), endures annual trans-Saharan circuits too.

This butterfly species travels 12,000 km and crosses the Sahara Desert twice to seasonally exploit resources and favourable climates on both sides of the desert. Few species are known to perform annual long-range trans-Saharan circuits, and that of the painted lady is the longest migratory flight known in butterflies to date. (*Biology Letters*, doi.org/csft)

The findings published in *Biology Letters* are part of a wider project aimed at studying the Painted Lady's migratory behaviour and routes. With that goal in mind, a global citizen science project called *The Worldwide Painted Lady Migration* has just been launched. Its objective is to gather observations of the Painted Lady Migration. More information on this project is available at: [www.butterflymigration.org](http://www.butterflymigration.org)

### SUSTAINABLE CITIES USING GREEN INFRASTRUCTURE

Cities are becoming increasingly populated and overwhelmingly difficult to manage, an issue exacerbated by the rapid detrimental

effects of climate change and urbanization. Earthwatch's Sustainable Cities (SuCi) project in Europe is a multidisciplinary and innovative citizen science research project supported by leading researchers, private and public stakeholders. The project focuses on better understanding how we can manage urban green spaces to improve ecosystem services and reduce the effects of climate change and urbanisation.

The impact of climate change and increasing urbanisation in modern cities has led to a rise in storm-water flooding, nutrient pollution and heat island effect, requiring urgent and long-term sustainable solutions. Nature-based green infrastructure are powerful resources already available in our cities that if managed strategically, have the potential to mitigate these impacts.



Whilst there is already a good understanding of the benefits of trees on urban hydrology and microclimate, the mutual relationship of the health and productivity of urban trees on carbon cycles, soil hydrology, local cooling is poorly understood. As a result, trade-offs and synergies between ecosystem services provided by trees are often ignored and there is a lack of understanding of the effect that different land management practices have on the ecosystem services.

SuCi is a multidisciplinary project investigating the benefits of strategic management of urban wooded areas in the context of climate change adaptation and urban planning.

This research is ongoing in six different urban settings in Paris, London and Birmingham where data on soil carbon and hydrology, local microclimate, tree health and productivity is obtained using citizen scientists. Physical samples are also collected from the field to undergo laboratory analysis by partner academic institutions, while tree health and productivity data is obtained from the study trees with state-of-the-art automatic micro-dendrometers.

This research is providing new insights into the ecosystem services provided by urban trees, and key information to support the best practices for nature-based solutions that can mitigate the effects of climate change and urbanisation. In addition to increasing public awareness, this project creates corporate engagement and fosters human health and wellbeing for resilient and sustainable cities.

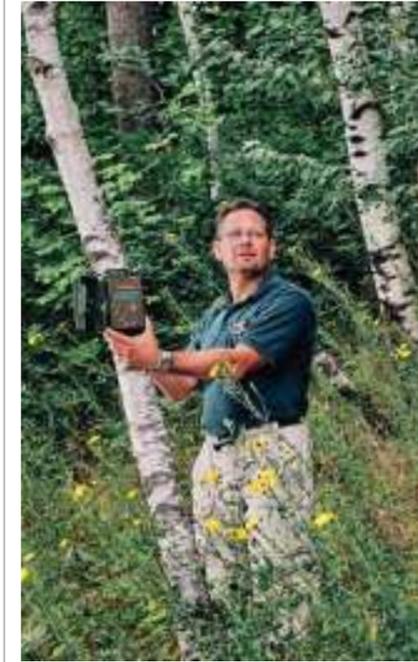
To learn more about the project contact Macarena Cardenas [mcardenas@earthwatch.org.uk](mailto:mcardenas@earthwatch.org.uk)

### ARCHAEOLOGIST SEEKS ECOLOGIST – CALL FOR COLLABORATION IN BELIZE

Professor Elizabeth Graham (UCL Institute of Archaeology) is leading a long-term archaeological field project at a Maya site in Belize – the Marco Gonzalez Project on Ambergris Caye.

Situated in mangrove swamp on a coral island which is part of a barrier reef, the site represents over 1,500 years of occupation—sometimes as a village, other times as a town and major trading depot. Prof Graham's focus has been quantifying the contribution of the archaeological deposits (rubbish, collapsed houses, burials, kitchen middens, processing debris, salt-making, etc.) to soil formation processes. The modern surface and sub-surface soils formed by human activity are relatively nutrient-rich compared to the naturally

## FUNDRAISING NEWS



### ESA SIGNS UP FOR #BES2018

International participation in the Annual Meeting continues to grow. ESA have confirmed that they will be exhibiting for the first time in 20 years.

'The Ecological Society of America and the British Ecological Society have always had strong links, and recent joint online publishing ventures have served to further strengthen the relationship. ESA is delighted to be exhibiting at the BES Annual Meeting this year. See you in Birmingham!'

Sue Silver, Editor-in-Chief, *Frontiers in Ecology and the Environment*

### ECO-FRIENDLY BES MERCHANDISE COMING SOON

We are working with *The Sourcing Team* to create a range of sustainable merchandise including; notebooks made from apple peel, stainless steel coffee flasks, 100% organic cotton T-shirts and biodegradable pens. A range of BES branded products will be available in time for the Annual Meeting. We are also looking at options for an online shop in time for Christmas. Search, 'Sourcing Team Highly Accredited' for information on our new supplier's sustainability policies, ethical credentials and supply chain compliance.

### SHOP FOR ECOLOGY

We have just launched on Smile Amazon UK, the online retailer's new platform that promotes charitable giving. 0.5% of nearly every purchase you make will go to the BES at no cost to you.

If you would like to know more about BES fundraising initiatives please contact Paul Bower [paul@britishecologicalsociety.org](mailto:paul@britishecologicalsociety.org)

formed soils that developed over the reefstone. Locals up and down the coast of Belize seek out the nutrient-rich soil from these areas for their gardens.

The team working on the project to date comprises archaeologists, soil scientists (a soil micromorphologist, soil microbiologist, and pedologist), botanists, petrographers, a geologist, an environmental engineer, a palaeolimnologist, faunal analysts and macrobotanists.

What's missing? An ecologist—a researcher who is interested in the flora and fauna as part of a larger picture of change. Humans began to trigger change at about 500 BC or even earlier. The build-up of the land surface created an environment that was more inviting to various species than had been the case when the land was largely submerged. The massive accumulation of conch shells from fishing, for example, provided—and still provides—a whole range of housing for hermit crabs (*Coenobita clypeatus*). The land crabs (*Cardisoma guanhumi*) dig numerous burrows—bad for archaeology but good for the soil. Birds seem to be attracted to the young hermits that hide under the leaf litter. The birds excrete seeds from fruit trees they have visited on the mainland. It is fascinating. Yet it is difficult to find researchers who are interested in the larger process of change that admittedly involves humans and their bad practices but nevertheless seems to lead to diversity and nutrient-rich soils.

If you are interested in learning more about the project, please contact Prof Graham at [e.graham@ucl.ac.uk](mailto:e.graham@ucl.ac.uk)



### #BES2018 GOES WILD(LIFE)

Wildlife Acoustics, who are exhibiting at #BES2018, have come forward to help us fulfil a long term ambition of including a bio-acoustic soundscape as part of the Annual Meeting. We will be working with them to provide an engaging, scientifically relevant and non-intrusive soundscape in part of the venue. So don't worry, no bat clicks over lunch or whale song when you are preparing your presentation. There will be plenty of quiet areas.

Wildlife Acoustics, based in Massachusetts are a leading provider of bioacoustics monitoring systems for researchers, scientists, conservationists and government agencies worldwide. They also have UK-based staff in the Peak District who recently worked on *Springwatch*.

Nicole Wright of Wildlife Acoustics said, 'We're very excited to bring an immersive experience to the 2018 BES Annual Meeting. We believe that soundscape ecology tells a unique story and the sounds of wildlife are to be cherished and preserved. We are privileged to work with and for ecologists who are capturing these sounds and happy to share them with you all.'

[wildlifeacoustics.com](http://wildlifeacoustics.com)

## SYMPOSIUM REPORT

# NATURE CONSERVATION FOR FUTURE GENERATIONS

## SEIZING THE MOMENT IN MANCHESTER

**Clive Mitchel**, Scottish Natural Heritage | **Peter Brotherton**, Natural England | **Ruth Waters**, Natural Resources Wales  
**Catherine Duigan**, Natural Resources Wales | **Sara McGuckin**, Northern Ireland Environment Agency  
**Helen Baker**, Joint Nature Conservancy Council | **Des Thompson**, Scottish Natural Heritage

## “We are not lost, we just have not been found yet!”

**Dara McAnulty (14 years old from Northern Ireland)**  
A passionate plea for his generation

*Securing Nature for Future Generations* was the theme and on 23-24 May 2018 more than 220 policy advisers, practitioners, students, natural and social scientists, and agency, NGO and business staff gathered in Manchester Metropolitan University for this first conference jointly organized by the agencies and BES.

We had a lively mix of 20 minute talks, panel Q&A sessions, three minute speedy presentations, one (yes, one) minute policy and practice pitches, workshops, posters and networking. Fun, taxing, challenging and tremendous were words uttered repeatedly.

Former President and conservation guru, Sir John Lawton, set the scene for us fantastically. What, cried John, will become of nature reserves and protected areas – initially set in a countryside that was more benign to nature in the early 20<sup>th</sup> Century but increasingly hostile to it in post-war Britain? ‘The Lawton Report’ (2010), *Making Space for Nature*, called for ‘bigger, better, more, joined’ protected areas as a necessary but not sufficient response. What this happened since then? This set the tone for much of our discussion on nature conservation, with the sustainable use of resources an essential part of our approach.

We devised some draft principles to guide how nature might be secured for future generations, and here we use the headings to summarize the tone of discussions.

### UNDERSTANDING HOW NATURE WORKS

In nature, change is the only constant. People and nature always interact. Change is not the same as ‘loss’. We cannot re-create the past. Nature was not in a perfect and final state before people encountered it. People, at least at sea, are part of the predatory system. A vital function of conservation is to maintain flexibility, including genes and species diversity as the building blocks and potential for change. It is essential that conservation takes a global approach to inform priorities for the UK, and repeatedly we asked *what is the UK globally important for?*

Questions of scale for both space and time need to be given more attention in conservation. Nature and natural processes are usually well defined at a local scale, but we need to recognize the relevant social and economic scales (typically regional or global) to identify relevant stakeholders and interests, essential for solutions and monitoring progress.

Although there are many good examples of species management, these can often polarise views, and should be viewed in a broader landscape. This larger scale requires us to address issues such as climate change, land use and natural resource management.

We need better measures of healthy, resilient and functioning ecosystems that allow reporting at local and national scales – a particular science challenge. We need new ways of working in planning and evaluation, including integrated approaches to natural resource management and natural capital accounting.

Contrary to popular belief, the deep oceans are rich in life, but these are highly vulnerable due to slow processes, and contaminants and plastics show that dilution is not the solution to pollution. Factoring this into choices about using deep sea resources raises questions for each one of us in our lifestyle choices – from plastic straws to TV screens; Blue Planet II revealed this brilliantly.

We need to provide the evidence which will help us make decisions to change how we live.



Juliette Young, NERC Centre for Ecology and Hydrology



Helen Craig, Black2Nature



Baroness Barbara Young



Louise Macdonald, CEO of Young Scot, and Chair of the Scottish Government's Advisory Council on Women and Girls



Dara McAnulty and Sir John Lawton

## INVOLVING PEOPLE

*Who is conservation for?* Dara McAulity stole the show for many delegates with a splendid view from the younger generation. He called for fewer doom-and-gloom stereotyping of young people, and instead urged us to celebrate the work of dedicated young naturalists and organisations fostering a national coalition of young people for nature.

Young people are citizens now and have a right to be part of decision making, with the organization Young Scot, and its partnership project with Scottish Natural Heritage, 'Re-Route' as an example of co-design to understand problems and devise solutions. This needs to be a journey, not a 'tick-box' exercise. Young people are not a problem to be solved, but a force to be unleashed.

Conservation conflicts result from not tackling the underlying conflicts and power relations between people. Making progress relies on supporting true integration across disciplines, sectors and communities. We need to acknowledge that ecological science provides only one form of knowledge. Conflicts can offer an opportunity to discuss differing world views – but we tend to ignore them or wish them away or express them in terms of ecological impacts and imposed solutions.

## VALUING THE BENEFITS FROM NATURE

The benefits from nature are still to be clearly expressed, especially when we use the language of 'natural capital' to communicate what people derive from nature. Many delegates felt we needed to know more about the relationships between ecosystem functions and services before using natural capital - to avoid what they saw as the unintended consequences of commodification and commercialization of nature and corroding its intrinsic worth. A lot of us value nature because of its diversity, tangible beauty and even its alluring complexity – not because we can attach a monetary value to its functions.

We already use scientific, aesthetic, intrinsic and spiritual arguments

to support the cause of conserving nature. We need to add the political case for restoring nature, namely its role in our health, wealth and security. Natural capital is a powerful way to communicate that, but we must use a language that excites rather than bores people.

Investing in nature is essential for flood management, carbon storage, water security, food security, climate adaptation and coastal realignment. It came across clearly that investing in nature is investing in us.

Support mechanisms for natural resource management (e.g. CAP – potentially soon to leave us) have prioritised social and productivity goals over the environment. New mechanisms need to put environment to the fore. Ecological and cultural values appreciate over time in many ecological systems, especially woodlands, and we must not lose sight of this.

Several speakers aired the theme of integration, across:

- nature, inequalities and deprivation;
- nature and culture (e.g. art, poetry, literature);
- the shared responsibilities in the value chains for food, not falsely dividing industry from society from nature;
- the need to include the costs of poor public and animal health and climate for better management of natural resources for people and nature, and;
- food security, and the need to address demand-side issues, including consumption, waste and diets.

We heard that current farming is not sustainable, overall requiring 10 calories of fossil fuels for every 1 calorie consumed. In Wales, every major public body is required to work together to deliver a set of goals underpinning the visionary Well-being of Future Generations Act to make better decisions for people and nature in the long term, and generally improve the social, economic, environmental and cultural well-being of Wales.

Managing natural resources is far more effective if policy and practice are co-designed and co-produced

with practitioners. In remote areas, especially at sea and in the uplands, this helps to reduce the otherwise spiraling transaction costs of monitoring and implementation.

## SUMMING UP

Baroness Barbara Young wonderfully highlighted the fantastic stories from our four nations and the power in coming together to exchange knowledge and experience. She highlighted the roles for dialogue, listening, different viewpoints, interdisciplinary working and valuing many forms of knowledge.

## CONFERENCE KEY MESSAGES

- Brexit is both an opportunity and a threat;
- Protected areas, habitats and species remain important but need to be considered in the context of ecological resilience and landscapes;
- We need different ways of measuring the environment and working with others, especially young people;
- Communication and language is very important;
- Don't forget the marine environment;
- Governments need to make it easy to change behaviour;
- Young people value nature and need to be empowered.

## NEXT STEPS

We will develop the principles aired at the conference for further discussion, hopefully at a BES forum, and respond to Dara's challenge of fostering a national coalition of young people for nature. Fundamentally, we want to position the BES as a clear voice for nature, making it more secure, enjoyed and fundamentally important to everyone.

We intend to run a follow-up event in 2020, focusing on post-2020 targets and the challenge of landscape-scale approaches.

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## FISHING FOR SOUND

# AN INTERVIEW WITH CHRIS WATSON

Rory Gibb | [rory.j.gibb@gmail.com](mailto:rory.j.gibb@gmail.com) | [@roryjgibb](https://twitter.com/roryjgibb)

From the studio of Cabaret Voltaire to the insides of a zebra carcass. Chris Watson is one of the world's leading sound recorders of wildlife and natural phenomena. Here he talks to Rory Gibb about soundscapes, acoustic monitoring, and what we can learn from listening more.



© Jason Roberts

## FEATURE

Chris Watson's astonishing eighteen-minute audio recording of Iceland's Vatnajökull glacier, from his 2003 album *Weather Report*, evokes an otherworldly temporality, plunging the listener into the sighs and slow groans of thousands of tons of moving ice. The piece is one of the most emotionally affecting and ecologically resonant of Watson's many sound works: an intimate portrait of the inner life of an entity that we typically consider vast and inanimate, and one that is also in rapid decline. Watson's four-decade career as a sound recordist and musician has been full of such moments of rupture and exploration, from his former role as sound manipulator and tape recordist in Sheffield band Cabaret Voltaire, into his ongoing work as one of the world's highest-profile wildlife and environmental sound recordists. A regular collaborator of the BBC Natural History Unit for wildlife programming, with a rich archive of albums and radio works, Watson's intricate and wide-ranging audio recording practice shares a strong kinship with the growing community of ecologists using sound recording to monitor the effects of human pressures on species and ecosystems.

Growing up in Sheffield in the 1970s, the nearby moors and hills of the Peak District offered Watson a lifeline to the natural world. "Literally, a breath of fresh air," as he recalls, from the industrial urban environment and studio sessions with Cabaret Voltaire. As he became fascinated by the creative potential of tape recorders and sound manipulation, he gradually became more deeply engaged by the sounds he was hearing outdoors than the music they were creating in the studio. He cites the 20th century composer John Cage, "[who] said something that's always resonated with me: that there's already enough music in the world, all we need to do is listen more."

This aim, of encouraging people to deeply engage with the intimate lives of creatures and places, has been central to Watson's creative output over the years, from narrative-driven albums to immersive public sound

installations. I met him in Brighton's Attenborough Centre on the opening day for the latest of these installations, *No Man's Land*, a forty-minute long surround-sound voyage through underwater soundscapes from Arctic to Antarctic. The piece begins on Brighton beach, with the sounds of starlings on the city's burned-out West Pier, recorded by Watson around fifteen years ago. "They'd occupied the ballroom, this place that decades ago used to be full of music and people, and was now filled with tens of thousands of starlings and their music and sound," he remembers. "I spent a whole weekend there, recording day and night the envelope of the empty ballroom. The birds arriving in the evening, spending the night in there, and then departing in the morning; from a massive roar of all these birds, to just a few pigeons and the sound of the ocean underneath."

**The sounds of the ocean have kept resurfacing as a theme in your work over the years. What keeps drawing you back there?**

It's been with me a long time. I grew up watching natural history programmes on television as a teenager, and I'm of an age that I can just about remember Jacques Cousteau, the famous French marine biologist. He wrote a book and made quite a famous film called *The Silent World*, and I bought into that idea [that the ocean is silent] until my late teens when I discovered hydrophones, and realised that Cousteau was just talking bollocks. [The ocean] is the most sound-rich environment on the planet, sound travels almost five times faster through seawater than air. And of course things like Roger and Katy Payne's [1970 album] *Songs Of*

*The Humpback Whale*, I really liked that crossover of art and science, of making science accessible and engaging and entertaining. That was the trigger for me to explore the sounds of the oceans, and it's continually fascinated me ever since. I take my hydrophones everywhere, whether it's a pond in a garden with aquatic invertebrates, or the songs of the largest and loudest animal that has ever lived, the blue whale. I like the idea, too, that it's like fishing for sound. You dip your hydrophones in and, although you can target areas and animals, they don't always read the script, so it's interesting to discover what's down there.

**The long travel distance of sound underwater means also that the idea of locality becomes scrambled: whatever you're hearing is not local in the way you might consider from a terrestrial perspective.**

The final animal songs in [*No Man's Land*] are bearded seals recorded under the ice on the coast of Svalbard, these siren voices. The sea surface was frozen solid, there's no wave action, and it's almost like you're in a space like this [concert hall], there's a clarity to it. I was working at the time on *Frozen Planet* and Professor Christian Lydersen, from the Norwegian Polar Institute, listened to these tracks of mine and was saying that some of these male bearded seals could be twenty kilometres away from the hydrophone. You're drawing in sounds from over this vast undersea area, this incredibly hostile environment where you could never really go: to my ears, it's some of the most hauntingly beautiful music I've ever heard.

I take my hydrophones everywhere, whether it's a pond in a garden with aquatic invertebrates, or the songs of the largest and loudest animal that has ever lived, the blue whale.

Some of my favourite wildlife sound recordings are of Weddell seals under the Antarctic ice.

Yeah, it's like 1950s electronic music, it sounds synthesised, it's amazing. We know so little about how they produce those sounds, and it's a dangerous occupation, because when they do that — we imagine to retain their harem of females — they draw attention to themselves. These enormous pods of orcas come up the ice seas, and what they're listening for is a nice tasty Weddell seal, which they eat like cocktail sausages. So you've got to sing to keep your harem together, but there's a price.

**Recordings like these often feel incredibly intimate. I'd be curious to hear you talk about the possibilities that sound offers for telling stories about, and providing a window into, the lives of other creatures and places.**

Recordings give us the opportunity to listen — because we don't. That was the continual frustration of working in natural history television. Everything's covered in this dreadful inappropriate music, or you're lectured to and told what you can see. This is one reason why I love doing these installations. There are no pictures, no other music, you just tune in and listen. Watson's 1998 album (*Outside The Circle Of Fire*) was a celebration of listening to the detail of animal sounds, and not veiled in anything else like in most broadcast mediums. You can engage with it in quite a unique way, and when you listen to these sounds, whether it's a wren singing outside or a humpback whale, you realise it's infinitely more engaging than any other artificial music you could lay over it.



© Bill Oddie

**There's also the possibility of going places with a microphone that you couldn't with your own ears. For example, 'Cracking Viscera', where you recorded the sounds of vultures from inside a carcass.**

That was a moment for me. I'd been working on a BBC series called *Big Cat Diary* and I'd been frustrated, as one of the camerawomen I was working with, with her £50,000 Canon telephoto lens, could fill the frame with a leopard's head from seventy metres away. There's no audio equivalent to that — there's no telephoto or zoom-lens microphones. I thought it'd be really interesting to hear what vultures eating a carcass actually sounds like in that space, rather than distantly or remotely. So the Christmas beforehand, the day after Boxing Day we staked the remains of the turkey carcass in the back garden with tentpegs. I put two personal microphones inside the carcass, ran the cables back into the house, we all waited, and the starlings descended and I got this astonishing

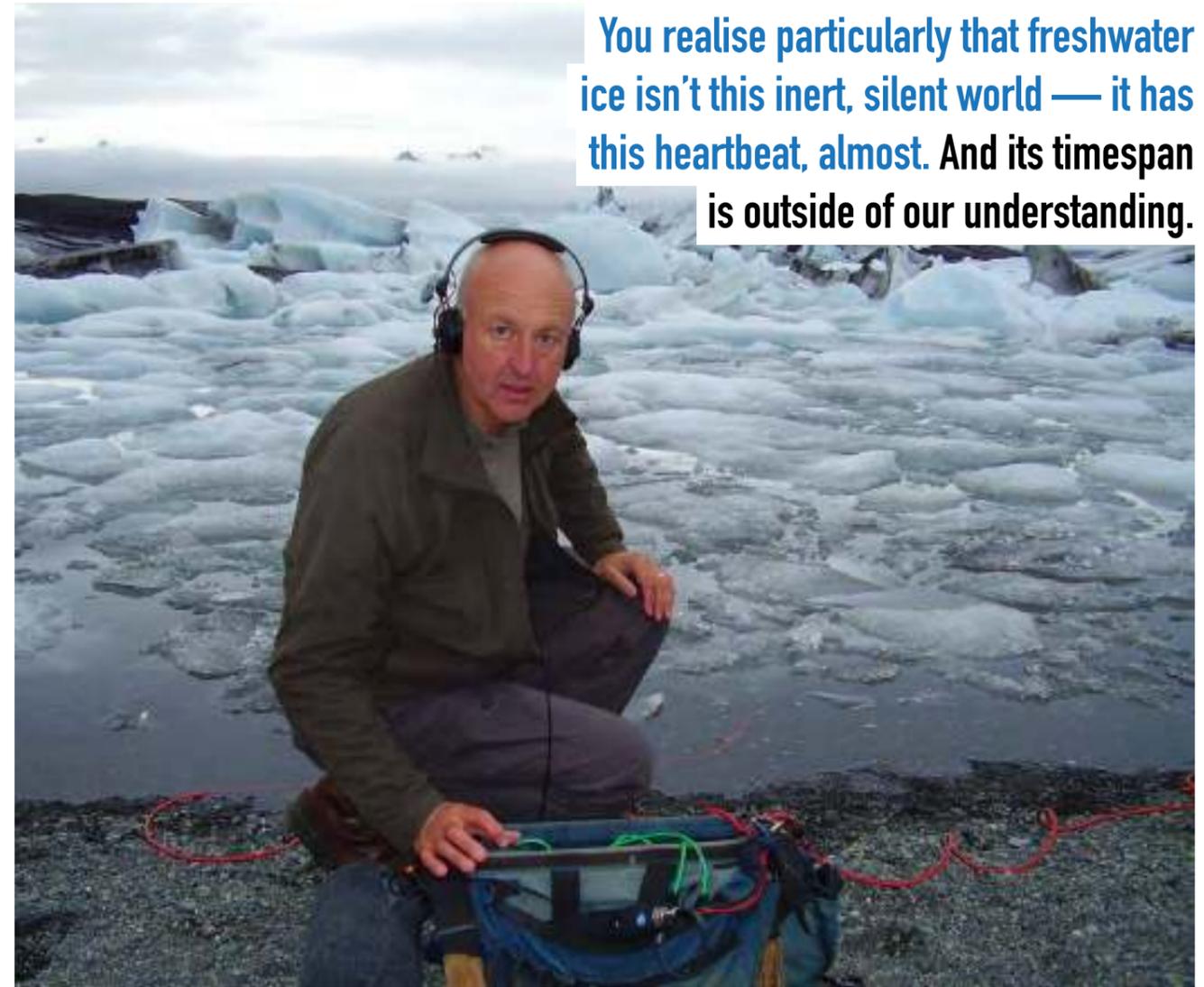
recording. You can't listen to it on headphones, it's like having your skull pecked out.

So we went out to the Maasai Mara, found this zebra carcass, ran the cable back fifty metres and waited for the vultures to descend. After several hours, these lappet-faced vultures descended and tore this thing apart, and I got a recording from the inside, it was amazing. I played it to the production team and they found it really hard to use, because it's so powerful that for a change you don't need an image, you only need to listen to it. That's the beauty of it, it fires your imagination.

**One growing theme in the acoustic ecological monitoring field right now involves quantifying how the natural soundscape is changing under human pressures. You've been recording environments for years — I'm curious how much you feel these soundscapes have transformed or diminished over time.**

I had a really interesting personal demonstration of that. Years ago, when my sons were eighteen months old, I got a whole summer's worth of recordings with a microphone in the back garden. I didn't use it for much [until] six or seven years ago I got asked to do a radio programme about my garden. I listened back to those recordings from twenty-odd years before, and they were full of house sparrows. I went out into my back garden and, from there being dozens [in the past], there were very few, there was just one male singing on our garage roof. This year there's dozens, they're back again. I don't know why it's changed: have the sparrows recovered, or is it a cyclical thing? This really eloquently described [to me] the importance of

**I put two personal microphones inside the carcass, ran the cables back into the house, we all waited, and the starlings descended and I got this astonishing recording. You can't listen to it on headphones, it's like having your skull pecked out.**



© Kate Humble

**You realise particularly that freshwater ice isn't this inert, silent world — it has this heartbeat, almost. And its timespan is outside of our understanding.**

recording over time. Even in cities, something as mundane as regularly recording the sounds in your street and archiving them somewhere like the British Library National Sound Archive, can be incredibly valuable — because in 100 or 500 years' time, there'll be endless images of those places, and vanishingly few sound recordings. In my experience, what [long-term monitoring] mostly turns up, unfortunately, is the aspect of noise pollution.

**Something which is becoming a rising problem in the oceans in particular.**

We just don't understand what we're doing to the oceans with noise. One great example for me was when we were in the Antarctic for *Frozen Planet*, as the sea ice starts to break up, filming as the seals move in and the orcas follow them. I was stood with my hydrophones on the surface of the frozen ocean, listening to these orcas, and I had to stop recording

when a nautical icebreaker ship was seventeen miles from my hydrophone, because the noise was deafening underwater. You couldn't see this icebreaker, it was a speck on the horizon, but the noise was horrific. For an animal that lives in a world of sound and vibration, we literally cannot imagine what it's like, it must be totally disorienting. I'm sure that being bombarded like that must be connected with the increasing number of whale strandings.

**There are clearly broader social and political implications to your work, then. Listening is a form of bearing witness to what's happening to the environment, for example your recording of the Vatnajökull glacier, which is declining over time. How do you orient your work in relation to its political agency in the world?**

Publishing the material, and giving people the opportunity to hear it. The more you know about something — whether the oceans, a whale or a

glacier — the more likely you are to care what's happening to it. Being able to hear these things, and realise that they're out of our realm but they're part of the ecosystems of the planet. You can see pictures of the diminished glacier: it's reduced over the years, it's gone further up the beach exposing the lava. But to hear it, you engage with it in a very different way. You realise particularly that freshwater ice isn't this inert, silent world — it has this heartbeat, almost. And its timespan is outside of our understanding. The morning I made those recordings, I was staying on top of the glacier and using my hydrophones in a crevasse like big contact microphones, so you get this fractional shift of the ice. The scientist I was with said that the snow that fell here last night will take ten thousand years to reach the sea. That was a really sobering moment, and that's what inspired me to make that piece: to imagine that journey of a piece of ice, and condense it to eighteen minutes.

## FEATURE

# HOW CAN MUSEUM COLLECTIONS BETTER SUPPORT ECOLOGICAL RESEARCH AND NATURE CONSERVATION?



Henry McGhie | Manchester Museum, University of Manchester | [henry.mcghie@manchester.ac.uk](mailto:henry.mcghie@manchester.ac.uk)

**UK museums hold 140 million natural history specimens – a vast and underused source of information for ecologists. Henry McGhie from Manchester Museum explores how ecologists and museums can work together to tackle some of the biggest research questions around biodiversity and climate change.**

UK museums contain roughly 140 million natural history specimens, including mammal and bird study skins, taxidermy mounts, bones, pinned insects, dried molluscs and other invertebrates, dried plants, lichens and fungi, specimens on microscope slides and preserved in alcohol/formalin, fossils, rocks and minerals. There are roughly 80 million specimens in the Natural History Museum (London), and 60 million in other museums. Collections have been built up since the 19<sup>th</sup> century. Large museums have encyclopaedic, global collections. Regional museums often contain the best collections for their region, and even relatively small museums can be home to very important collections.

In addition to these, the Hunterian Museum (Royal College of Surgeons, London), Lapworth Museum of Geology (University of Birmingham), Leeds City Museums and Galleries, Sunderland Museum, Great North Museum: Hancock (Newcastle upon Tyne), Yorkshire Museum (York), University of Aberdeen (zoology,

plants and geology), Kelvingrove Museum and Art Gallery (Glasgow), Hunterian Museum (University of Glasgow), Perth Museum and Art Gallery, Elgin Museum, and Bell Pettigrew Museum (University of St. Andrews) are recognised for their national importance by the UK and Scottish governments. A number of English university museums receive funding from Research England as a research infrastructure, and a similar scheme runs in Scotland (run by the Scottish Funding Council).

Museum collections are often associated with taxonomy, and they certainly support taxonomic research; there is plenty of work to do, with an estimated 86% of land species and 91% of marine species awaiting description (Tittensor *et al.* 2011). However, museum collections support the exploration of a much wider range of ecological and environmental topics. Specimen labels provide basic information on what species occur where, or at least where they once occurred. Even today, historical collections are a basic source of

information on the occurrence of species in remote areas, although rapid environmental change may mean that they reveal where species once were, rather than where they still occur. Specimens enable former assessments of distribution and identification to be reassessed, notably in light of taxonomic changes. Museum specimens are a major contributor to IUCN Red List assessments, and are an essential tool for work on the Convention on Biological Diversity, and for national and local biodiversity assessments. Collections reveal environmental change, the most famous example probably being Derek Ratcliffe's work linking the decline in birds of prey in the UK in the mid-20<sup>th</sup> century to egg-shell thinning as a result of DDT poisoning. Collections of eggs, plants and insects reveal changes in phenology. For example, Brooks *et al.* 2014 found strong relationships between the flying time of British butterflies and spring temperature, based on specimen data from museum collections. Specimens are sampled for DNA to explore relationships within and between



Encyclopaedic collections built up over many years mean collections are 4 dimensional, with a time dimension.

**UK museums with more than a million natural sciences specimens**

	Number of specimens
Natural History Museum	80 million
National Museums of Scotland	10 million
Royal Botanic Gardens, Kew	8.5 million
Oxford University Museum of Natural History	5.65 million
Manchester Museum, University of Manchester	4.5 million
British Geological Survey	4 million
Royal Botanic Garden, Edinburgh	3 million
World Museum Liverpool	1.6 million
National Museum of Wales	1.3 million
Cambridge University Museum of Zoology	2.75 million
Bristol Museum	1.1 million
Cambridge University, Sedgwick Museum of Earth Sciences	1 million
Norwich Castle Museum and Art Gallery	1 million

species, informing decisions on reintroductions. DNA sampling also helps explore population dynamics, the timing of bottlenecks, and changes in gene frequency over time. Changes in levels of environmental pollutants over time can be revealed from samples of animal and plant tissues (such as mercury in the feathers of seabirds). Analysis of stable isotopes reveals a whole range of details on diet and trophic levels, and even migration of animals.

The ongoing usefulness of collections is threatened for four main reasons. Firstly, collections are not as visible

or accessible as they could be: faced with enormous numbers of specimens, the task of digitising and networking collections is monumental. Secondly, museum funding cuts mean that there are less natural-history-trained curators in museums than there used to be. Thirdly, there is relatively little contact between researchers and museums, or a strategic relationship between museum collections and research agendas. Fourthly, collections need to continue to be developed to ensure that time series studies can be made, and that specimens are preserved and information curated so that they are useful.



The timing of Corncrake population collapse was explored by studying the proportion of adult and immature Corncrake specimens collected over time.

It is important that collections continue to be useful and used by researchers, policy makers, and those working directly with site and species conservation. Just as environmental science has been transforming rapidly, there should be new ways of working that draw more effectively on museum collections. Also, in a time of reduced resources, it is important to understand how collections can support global biodiversity in strategic ways.

A project is underway, funded by the BES, that seeks to develop better links and better understanding between ecologists and other environmental researchers, and museum workers, of the current and unrealized potential of museum collections. This is framed around the '100 questions of importance for the conservation of global biodiversity' (Sutherland *et al.* 2009). Online surveys are completed by experts (researchers, practitioners, policy workers) and, separately, by museum workers (curators, collections managers, etc.), on their perceptions of the current and potential usefulness of UK museum collections in addressing 12 research areas: ecosystem function and services, impact of climate change on biodiversity and ecosystems, impacts of technological change on biodiversity, protected areas and biodiversity, ecosystem management and restoration, terrestrial ecosystems, marine ecosystems, freshwater ecosystems, species management, nature conservation organizational systems and processes, impacts of societal change on biodiversity, and impacts of nature conservation interventions. This helps identify both the research potential and any perception gaps between experts and museum workers, and helps build a better, shared understanding of the potential, and limitations, of museum collections. Some generic questions help identify how and where researchers, practitioners and policy workers would discover information on museum collections.

The project will make recommendations to the museum sector, BES, funders and research agencies/councils. Already, the surveys show that researchers, policy workers, site and species managers can see tremendous potential for museum collections to support the conservation of biological diversity.



Museum collections of eggshells played an important role in identifying the environmental impact of DDT in the 20th century.

Responses have been received from people working within some of the UK statutory nature conservation agencies, Kew, Royal Botanic Gardens Edinburgh, Institute of Zoology, Centre for Ecology and Hydrology, many universities, environmental records centres and international agencies including IUCN. Responses have come from many of the national focal points for the various groups working in support of the Convention on Biological Diversity. The project is looking to get many more responses (this is you!), and will be open until January 2019.

People working in ecological/environmental/nature conservation research, policy and wildlife/habitat/environmental management are invited to complete the survey at this link: <https://www.surveymonkey.co.uk/r/552RG3V>

People working in museum curation, management and policy are invited to complete a similar (but not identical) survey at this link: <https://www.surveymonkey.co.uk/r/N3N8QG8>.

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Specimen labels are an important source of data, as on this label from a herbarium sheet of Assam Tea, from 1876.

**INTERESTED IN EXPLORING UK NATURAL SCIENCES COLLECTIONS?**

Find natural sciences collections in UK museums [natsca.org/NHNearYou](http://natsca.org/NHNearYou)  
Search collections in UK museums [fenscore.natsca.org](http://fenscore.natsca.org)

## PEOPLE AND NATURE

# THE TIME HAS COME FOR A JOURNAL OF RELATIONAL THINKING

Emilie Aimé | Managing Editor | emilie@britishecologicalsociety.org

Here at the BES we're dedicated to ensuring we publish across the full breadth of ecology. The discipline is evolving all the time and is reaching beyond its traditional boundaries, interplaying with many other fields of research, often themselves more directly focussed on people.

Our five established journals, *Functional Ecology*, *Journal of Animal Ecology*, *Journal of Applied Ecology*, *Journal of Ecology* and *Methods in Ecology and Evolution* are world-renowned and publish outstanding research in their fields. However, over a year or so of investigation and debate it became clear that there was space for a new addition to the portfolio.

With a stellar editorial board led by Editor-in-Chief Kevin Gaston and Lead Editors Kai Chan, Robert Fish, Rosemary Hails and Cecily Maller, *People and Nature* opened for submissions in June, to an overwhelmingly supportive reception from ecologists and non-ecologists alike. The scope of the journal is broad – we're open access and publish work from across research areas exploring relationships between humans and nature. We want to reach beyond the traditional BES audience to bring in researchers from all sorts of disciplines that interact with ecology.

The submissions so far and the level of excitement the journal has generated have surpassed our

expectations and we look forward to publishing our first issue with great fanfare early next year.

Get in touch if you have an idea for a paper you'd like to submit. We're particularly interested in submissions that whilst coming from disciplines outside of ecology have ecological relevance, as well as ones coming from inside of ecology but drawing on such other disciplines. We don't want to be too prescriptive but some examples might be work on human health and ecology, industry or business and ecology, international development and ecology, history and ecology... more examples from our editors below.

We look forward to seeing your submissions soon!

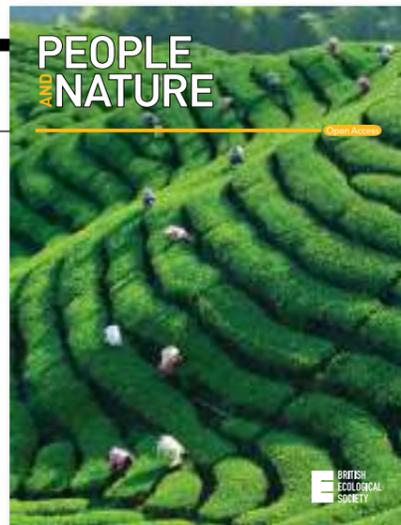
### MESSAGE FROM THE EDITOR-IN-CHIEF

So, you have a great idea for a new paper. It looks at some aspect of the interactions between people and nature. It will have some ecological relevance, but may not be a pure ecology paper. It will also have a

good bit of material drawn from one or more other disciplines – it could be economics, geography, history, law, literature, medicine, philosophy, politics, psychology, or sociology, to name just a few possibilities. But it is not a mainstream paper for one of those disciplines either. So, where will you submit your latest contribution? You will want a journal that not just considers outputs from this kind of cross/multi/interdisciplinary work, but really values them. You will want one that understands both the importance of your paper being promptly and fairly handled by people who are knowledgeable about the topic, and that takes seriously the challenges that can arise when reviewing work that crosses disciplinary specialisms. You will want one backed by a respected organisation, with a track record of publishing high quality journals.

Welcome to *People and Nature* – a journal of relational thinking.

The British Ecological Society is launching this new journal in recognition of the rapid growth in inter-, multi-, and transdisciplinary research concerning the relationships



between humans and nature. Much of this research addresses issues of vital importance.

We look forward to receiving your submissions.

Kevin Gaston – Editor-in-Chief *People and Nature*

We asked our Lead Editors Kai Chan, Robert Fish, Rosemary Hails and Cecily Maller to tell us why this new journal is timely and give us their thoughts on the papers they would like to see submitted.

### WHAT'S HAPPENING IN YOUR FIELD THAT MAKES THIS NEW JOURNAL IMPORTANT?

**Cecily Maller** – There is increasing interest in finding transdisciplinary ways of understanding some of the complex challenges of rapid urbanisation and biodiversity loss and moving beyond traditional, western or human centred approaches. This journal's focus on encouraging debate to expand the types of approaches, concepts, theories and methods applied to human-nature relationships will provide an important new outlet for this work. With its interest in multiple methods it will also provide a home for rich, in-depth qualitative research that is often challenging to publish in existing sustainability and environment journals.

**Rosie Hails** – Our understanding of the relationship between people and nature has itself evolved, from one of impact and exploitation, to a more dynamic one of management to secure benefits. Increasingly we recognise humans as part of the ecosystem, not separate from it. Our future academic development of this field therefore requires drawing on the advances that have been made in many of the natural science, social science and humanities disciplines, creating a new more deeply rooted interdisciplinary community.

**Kai Chan** – There is increasing recognition of the crucial importance of interdisciplinary studies addressing the intersection of people and nature, but among the journals that have

emerged most are quite narrow in some respect. More than ever we need a deeply interdisciplinary journal that spans the natural and social sciences, embracing a wide diversity of methods, perspectives and ideological positions. *People and Nature* offers just that, with a genuine open-access model from an eminent professional society.

**Rob Fish** – The study of interactions between people and nature has been through many cycles of theoretical and empirical innovation, and each of these has its own version and style of interdisciplinarity. Across the environmental social sciences we are entering, I think, a highly dynamic cycle of innovation centred on notions of 'co-dependency', 'co-construction' and 'co-determinacy'. The Journal will be an important venue in which this social science perspective is put into conversation with the theory and practice of ecological science.

### WHY SHOULD PEOPLE SUBMIT TO THE JOURNAL?

**RF** – The Journal inherits the Society's long-standing interest in promoting conservations and experimentation across disciplinary boundaries, and publishing the very best of current thinking. The interest of the Journal is to elaborate a new and ambitious field of relational scholarship, one that straddles the need for both analytical and interpretative perspectives on people-nature interactions, and bringing these perspectives together.

**KC** – Scholars and scientists should submit their work to get timely, reflective feedback from editors and reviewers, and to benefit from the broad reach of an open-minded high-profile journal.

**CM** – Scholars who are interested in engaging beyond their discipline, and outside of academia, should submit their work to this open-access journal to connect with like-minded others and to help consolidate research that is often out of reach or dispersed across a number of disciplinary specific journals. The journal will represent the cutting edge of research on human-nature relationships and will help shift current disciplinary-

bounded thinking towards more transformative paradigms.

**RH** – This journal will be the home for high quality interdisciplinary papers, highly regarded across the natural and social sciences, and the humanities. It will occupy a unique place in this emerging field.

### WHAT KINDS OF PAPERS WOULD YOU LIKE TO SEE SUBMITTED?

**RH** – I would like to see papers that are genuinely accessible to academics across the disciplines, which represent significant new ideas, concepts, approaches and evidence. This will require clarity in communication, moving away from the discipline specific language that often creates a barrier to understanding for those outside the immediate field; yet at the same time maintaining academic rigour and novelty.

**RF** – I am interested in the submissions of papers that look to challenge and re-think prevailing wisdoms about the relationship between people and nature. I personally welcome contributions and interventions that inspire interdisciplinary scholars to assemble around new conceptual framings of these relationships, and develop new approaches to their empirical elaboration.

**KC** – I would like to see papers that I haven't seen anywhere before, and papers that seek to break out of the moulds of traditional disciplinary thinking while maintaining a high degree of scholarly rigour. We want to see bold, thoughtful, innovative research, from all kinds of perspectives.

**CM** – I would like to see work submitted that challenges disciplinary boundaries and offers up new ways of understanding human-nature relationships. For example, this work may draw on indigenous and first nations perspectives, multispecies or more-than-human approaches. I also encourage experimentation with new methods and approaches that decentre traditional scientific knowledge and offer more democratic ways of making data and knowledge.

## RESEARCH

# THE UGLY DUCKLING OF THE OCEAN SUNFISH ECOLOGY

Lauren Ratcliffe | Bulletin Associate Editor | [l\\_ratcliffe@hotmail.co.uk](mailto:l_ratcliffe@hotmail.co.uk)

**Sunfish are strange creatures. We know very little about them and many assume they are simply anomalies of the ocean. Natasha Phillips, however, believes there is more to them than that and is pushing to improve our understanding of their ecology.**

### What drew you to study the sunfish?

The sunfish is a beautiful ugly duckling of the ocean. The more you read about it, more questions arise and you realise we really know very little about its ecology.

Normally when you look at a marine species, like a tuna or shark, you can see it is streamline and beautiful – built for strength and speed. Then when you look at the sunfish, you wonder ‘what on earth is that!?’

### Why is finding out more about the species' ecology important?

The bycatch of sunfish is off the scale and there is no management in place. We don't know how many of them there are in the population, what age they reproduce at, what they eat, their distribution... we know very little, which makes it hard to put management strategies in place.

Although they are pan-globally distributed, we know they are significantly clustered in certain regions around the world. These clusters are very vulnerable to being removed accidentally.

Creating baseline information of the species ecology is the first step before developing policy. It's of no-one's interest to wipe out the species accidentally. Fisheries don't

want to catch them, it's a waste of their time. So managing the species bycatch works on every level, from conservation to financial.

### Where is your research based?

We have permission to work in a marine protected area in Italy. There is a small traditional tuna fishery, which gets huge numbers of sunfish bycatch. It is in a marine protected area so the nets are pulled up by hand. The fish get clustered in the end of the nets and are lifted out one by one, completely unharmed, and released back into the ocean. Providing me with a perfect dependable supply of fish to take data from.

Unfortunately, this kind of management solution is only really possible on the small scale. On the large industrial fishing ships they have huge trawl nets where everything gets crushed at the bottom.

### Who do you work with on your research?

We received a grant from the Daiwa Foundation. This enabled us to organise a seven-day symposium in Japan to meet and share ideas with researchers there who are also working with sunfish.

I have also worked with the Monterey Bay Aquarium, which is the only one in the world to keep sunfish. So I could ask them questions about how to keep them in captivity – their diet and how to feed them.

Sunfish research is so small and niche – everyone knows everyone. They are all really helpful and enjoy sharing their knowledge and research.

### What outreach work have you done?

I have a blog, which shows that a lot of people are asking questions. I want to be able to reach more people to answer these questions.

I received one question from a mother and daughter in the States asking whether sunfish communicate. This got me thinking... when I take mucus samples from their tissues, they grunt and make so much noise. They really don't like being brushed – it's gentle, but they really don't like it. It wasn't something that I had really thought about until they mentioned it, and when they did I realized they are actually very noisy.

Social media is a powerful tool for helping you connect with other researchers and the public. One of the opening talks at the American Fisheries Society conference I went to in 2016 was about social media and how to communicate research.

### What advice would you give other researchers about using social media?

Always include pictures. Especially with something like sunfish, which can be hard to visualize. Keep your text short and sweet. You can always have links to more information later on. Have channels where people can ask you questions – on my blog there is a link to my email address and Twitter. The opportunities that come up if you put yourself out there can be very satisfying, especially when you're in the lab all day tapping away at your keyboard. For someone on the other side of the world to go ‘oh that's interesting’ can be very motivating.

## CAN YOU TELL US SOMETHING ABOUT YOUR MOST RECENT RESEARCH?

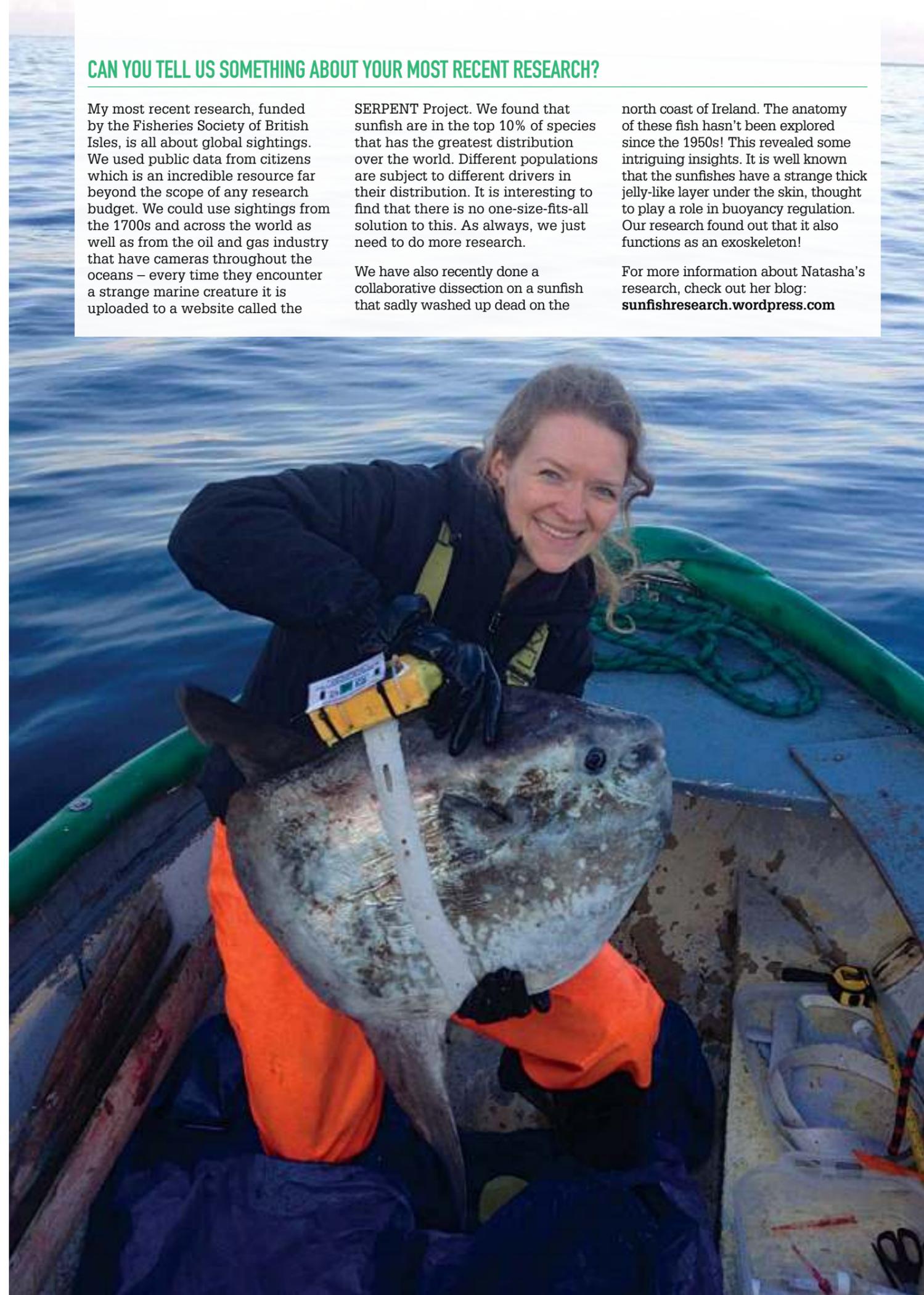
My most recent research, funded by the Fisheries Society of British Isles, is all about global sightings. We used public data from citizens which is an incredible resource far beyond the scope of any research budget. We could use sightings from the 1700s and across the world as well as from the oil and gas industry that have cameras throughout the oceans – every time they encounter a strange marine creature it is uploaded to a website called the

SERPENT Project. We found that sunfish are in the top 10% of species that has the greatest distribution over the world. Different populations are subject to different drivers in their distribution. It is interesting to find that there is no one-size-fits-all solution to this. As always, we just need to do more research.

We have also recently done a collaborative dissection on a sunfish that sadly washed up dead on the

north coast of Ireland. The anatomy of these fish hasn't been explored since the 1950s! This revealed some intriguing insights. It is well known that the sunfishes have a strange thick jelly-like layer under the skin, thought to play a role in buoyancy regulation. Our research found out that it also functions as an exoskeleton!

For more information about Natasha's research, check out her blog: [sunfishresearch.wordpress.com](http://sunfishresearch.wordpress.com)



## SOCIETY NEWS

# LIFTING THE BONNET OF THE BES



**Ali Birkett** | BES Board of Trustees – Early Career Rep | [a.birkett1@lancaster.ac.uk](mailto:a.birkett1@lancaster.ac.uk)

**Last year, Ali Birkett was elected to the Board of Trustees as our early career representative. Here she explains why ECRs should engage more with the Society at a strategic level.**

From the outside, a car is a relative simple thing that most people can understand. A metal box with wheels and mirrors, windows and doors. But even when you're on the inside many people wouldn't really know about systems that make it work.

Most large organisations are exactly the same.

At the British Ecological Society however, we're working to lift the bonnet, as it were, and equip our members with a manual, toolbox and the confidence to get involved!

### FUELLING THE SOCIETY

The fuel of the BES is the ideas, enthusiasm and hard work of its members. We provide the power to keep the Society moving forward, and transfer that energy to the moving parts of the system: the BES' excellent staff. Without an active membership we wouldn't get out of the garage!

### DASHBOARD DISPLAY

In a car, the dashboard is the first way of interacting with the inner workings. It gives updates from the main systems, an idea of what might be needed in the future, and particularly a gauge of that all important fuel.

For the BES, the dashboard is that section of the December Annual Meeting programme that may have seemed like a mystery: the AGM or Annual General Meeting.

I remember being impressed by the AGM when I first joined the BES eight years ago. I thought it was great how the Society kept everyone informed of progress and gauged the opinions of its members on its future actions – actions that it would ultimately make in their name. Questions were asked from the floor, votes were taken... this was a Society run by its members, for its members, with a great deal of openness.

However, over just a few years, I've seen the AGM attendance gradually decline, especially among our early career members. Is that the old imposter syndrome making members mistakenly think they don't have the right to have their say? Worrying either way.

### ESSENTIAL ENGINE

If the AGM is the dashboard display of the BES, the Board of Trustees and the six committees (Grants; Member Services; Education, Training & Careers; Meetings; Policy; and Publications) that feed into it are the engine. This is where the work goes on that is reported on the dashboard.

These groups meet quarterly to make and enact decisions about the day-to-day running and long term thinking of the Society. This engine is not however the closed box that it might seem. Any BES member is able to stand to be an "ordinary member" on the Board, or to offer their services to one of these committees or the more specific Working Groups.

And believe me, this isn't as scary as it sounds!

At last December's AGM I stood for and was elected to be early career representative on the Board, and therefore Chair the Early Career Working Group. I stood for the post because I've gained so much from the BES that I felt it was time to give something back.

I'm pleased to report that I have been welcomed into the meetings with great warmth and encouragement, for which I'm very grateful!

At the election however, I was painfully aware how few of those voting at the AGM were actually from the group that I was standing to represent. I've therefore made one of my aims of my time in post to be to help lift the bonnet of the BES and reengage other members with the inner mechanics...

...so I can count on seeing you at the AGM in Birmingham this December, right?

## SOCIETY NEWS

# HELPING ALL MEMBERS SHAPE OUR SOCIETY INTRODUCING ELECTRONIC VOTING



**Hazel Norman** | Chief Executive | [hazel@britishecologicalsociety.org](mailto:hazel@britishecologicalsociety.org)

**At the BES AGM in December a new set of Articles, the rules that govern the Society, was agreed. One of the really important changes was the adoption of online voting for Board of Trustee members which means that all members of the Society, and not just those attending the AGM, can choose who represents them. The Board of Trustees sets the strategic direction of the BES and decides on how resources are spent.**

Providing a safe, secure and accessible platform for online voting is very important and the BES is pleased to announce that it has appointed Electoral Reform Services Ltd (ERS) ([electoralreform.co.uk](http://electoralreform.co.uk)) to provide that for us. Each year thousands of organisations trust ERS to manage their ballot, election, vote, survey or referendum. Established in 1884, ERS has ca 200 employees delivering a wide range of election services, from design and print to digital democracy and vote verification. Their diverse client base includes professional bodies, mutuals, trade unions, healthcare providers, charities and voluntary organisations, companies, the public sector and political parties, broadcasters and housing associations.

The open call for candidates for the Board of Trustees happened in the summer and online voting will be open from 15 November to 12:00 GMT 14 December. The results of the vote will be announced at the AGM taking place on 17 December at the BES Annual Meeting in Birmingham, UK.

You will receive an email from ERS in November notifying you that voting is open and explaining how to cast your vote. You'll get a reminder email on 21 November and we'll also be promoting online voting via the BES social media channels at the same time. If you have any questions please get in touch.

We hope that all BES members will take up this chance to be more engaged with your Society and remember – every vote counts!

The ERSvotes website security starts with physical security of the datacentre hosting the website. ERS's equipment is co-located at a Tier 4 (the highest level) datacentre which also happens to be used to host the GSi (Government Secure Intranet) network.

ERS's servers and other equipment are setup following Centre for Internet Security (CIS) standards. CIS standards are detailed instructions for building server operating systems, disabling unnecessary services and configuring every component with the optimal settings for security. We also have a policy of applying any security upgrades and patches released by Microsoft, Cisco and other vendors as soon as possible after they are released (following testing on internal servers).

The security of the platform is then tested with regular vulnerability scans. Vulnerability scans are usually automated or semi-automated scans of the publicly accessible IP addresses using tools such as Nessus. ERS commissions a quarterly vulnerability scan from an independent PCI-DSS ASV (Approved Scanning Vendor), and also carries out more frequent internal scans whenever there are configuration changes to the environment.

Finally, the security of the application itself is tested with regular penetration tests (aka web application security tests). Penetration tests are skilled manual tests to identify if the application itself might be vulnerable to exploits such as SQL Injection or Cross-Site Scripting (XSS). ERS commissions an independent penetration test from a specialist web application security testing company before each major release of the software, and also carries out internal pen testing for minor releases or customisations.



## PUBLIC ENGAGEMENT

# SHARING THE EXCITEMENT AND IMPORTANCE OF ECOLOGY

Chris Jeffs | Engagement Officer | [chrisj@britishecologicalsociety.org](mailto:chrisj@britishecologicalsociety.org)

**A cliché to start: I feel like I have started my dream job as Engagement Officer at the BES. I'm an enthusiastic person, get easily caught up in the excitement of the natural world, and I find joy in developing interesting ways to enthuse people about science.**

### WHY IS PUBLIC ENGAGEMENT IMPORTANT?

Public engagement is a vital component of research and can be extremely enjoyable and rewarding. Ultimately it helps justify how we use public money to those who provide it, and it helps to demonstrate the impact of our work. It aids others make informed decisions on how their behaviour may impact the environment, and can inspire the next generation of ecologists. Greater public understanding and appreciation of our subject areas can attract the financial and political support we need to continue and implement that work (just look at the effect of Blue Planet II for a demonstration of the power of science communication).

### HOW I STARTED IN PUBLIC ENGAGEMENT

My route towards a career in public engagement was a gradual process that rapidly gained momentum. Insects are my particular passion, but I had no specific interest in them when I started university until a chance

encounter with a picture of parasitoid wasp on a desk in my first term. Once I learnt about parasitoids' incredible lifecycles I was hooked (who wouldn't love something that eats its host alive from the inside before bursting out!?). As my fascination with insects grew through my masters and PhD I realised how lucky I had been, and thought that so many people might never encounter the thing they find most fascinating unless we give them the opportunity to see it.

I began organising engagement materials for National Insect Week (the Royal Entomological Society's biannual summer celebration sharing the wonder and importance of insects). This included podcast, video, and blog series, a children's magazine, and most recently a museum exhibition and programme of events. Seeing the change in people's reactions to insects from a disgusted 'eww' to curious 'ooh!' and interacting with students thinking of becoming entomologists brought me such great joy and showed me the real value of public engagement. I knew this was the career path I wanted to take.

### EVENTS THIS YEAR AT THE BES

Since joining in May it's been great getting stuck into engagement activities at the BES N4FG symposium in Manchester, Bath Festival of Nature, and the BES undergraduate Summer School in Malham Tarn, Yorkshire.

Biggest of all I led our 'Nature of Food' stall at the BBC Good Food Show where, in collaboration with researchers at the N8 Agrifood research partnership (led by Lancaster University) and BES volunteers, we directly engaged with over 1000 visitors. We had a great range of interactive activities to communicate the important role ecological science plays in providing the food on your plate, and its vital role in futureproofing your food in the face of environmental challenges. You can see more about our activities at [natureoffood.org](http://natureoffood.org).



Left: Chris handing over a cockroach to an eager youngster during National Insect Week.

© Ekaterina Shatalova

Below: A packed Nature of Food stall at the BBC Good Food Show at the Birmingham NEC.

© Chris Jeffs



### FUTURE ACTIVITIES AT THE BES

Building on the suite of successful events attended by the BES in recent years (namely Chelsea Flower Show, Glastonbury, and the BBC Good Food Show) I wish to reach new audiences and involve a wide representation of the BES membership in 2019 and 2020. I encourage anyone to contact me with ideas for regional and national events BES members think the society should be represented at.

In addition, I hope to increase the number of members that can develop their skills through a suite of training workshops and online resources led by science communication and public engagement experts. If there is a specific area you want training in, please get in touch!

I'm excited by the status and level of support the BES gives public engagement, and I'm really looking forward to developing exciting plans for future activities with BES members. With over 6000 members in 130 countries and six journals of cutting-edge research at the BES, there is so much more for me to learn and become enthused about myself.

## POLICY UPDATE

**Sara Brouillette** | Policy Officer  
sara@britishecologicalsociety.org

Responses to Government consultations and Parliamentary committee inquiries, the inaugural Joint Policy Group meeting for devolved nations and Ireland, and a welcome to Brendan Costelloe, our new Policy Manager (maternity cover).

Our policy responses have looked at a range of environmental issues from the *Changing Arctic to Future Farming* policy. Members of the BES and members of the Policy Committee have been instrumental in making our consultation and inquiry submissions possible. We would like to thank everyone who has been involved, taken the time to submit evidence, and informed our responses. We are now working on a brief for BES members on how to give evidence and support our policy outputs. If you like to be kept up to date on the production of this brief, please do get in touch.

To provide BES members with information on how ecologists can engage in policy making, we began publishing a series of Policy Guides in 2017. We recently published our third Policy Guide: *How does science inform the UK Government?* which is freely available on the BES website. This guide provides an introduction to the structure of the UK Government, focusing on the various bodies within and across departments that use and provide scientific evidence. It also offers advice on how researchers can engage government with their expertise.

Finally, we recently held the inaugural Joint Policy Group (JPOG) meeting in Cardiff which involved policy groups from the devolved nations and Ireland. The meeting allowed the policy groups to learn from each other and gain ideas for how to grow in the coming years. If you want to find out how to get involved with your policy group or hear about upcoming events, please get in touch with anyone from our team!

**Brendan Costello** | Policy Manager  
brendan@britishecologicalsociety.org



Having started my career in land-use planning, I decided to put myself through a second Masters – this time in Conservation Science – so that I could pursue a career helping to safeguard one of my great passions in life: nature. Upon completing the MSc,

I joined the RSPB as a Senior Policy Officer, leading on a range of subjects, including the NPPF, Defra's review of its agencies, biodiversity offsetting, and the interminable reviews of the Birds and Habitats Directives. I also bring to the role some academic experience. This includes a review of best-practice for implementing the avoidance stage of the 'mitigation hierarchy' for development; and my own research exploring the use of global biodiversity indicators as tools for informing better policy decisions, rather than simply indicating that previous policy choices have often failed. I join the BES from the National Council for Voluntary Organisations (NCVO), where I spent the last 18 months leading on its Brexit policy and advocacy.

I've always loved nature and some of my earliest memories are of gazing up at azure summer skies through the leaves of trees, listening to the birds as butterflies fluttered past. This is something I still do, often with same child-like wonder and I still find it as relaxing as ever. Sadly, however, I don't see quite as many butterflies or hear as many birds as I did in my childhood. Turning this around requires the right evidence to make the right the decisions, and the BES is uniquely placed to cut through the politics and noise that surrounds conservation, and provide that evidence to decision-makers.



## SCOTLAND ROUNDUP

**Maggie Keegan**  
Policy Officer in Scotland  
maggie@britishecologicalsociety.org

The BES Scottish Policy Group (SPG) has held a number of successful events including a 'Pie and A Pint' (PAAP) in Inverness which posed the question "What does biodiversity success in 2020 look like?" and a policy training day for University of Edinburgh Environmental MSc students.

Discussions at PAAP highlighted the need for increased public engagement in the future biodiversity strategy and efforts should be sought to bring biodiversity to the forefront of a range of spheres including education and politics. A key tenant of a future strategy should be to address habitat fragmentation, and any new strategy needs to be underpinned by robust independent assessments and monitoring of past and current land management practices.

Reflecting on the policy training day on the science/policy interface, Rosie Baillie said: 'As someone with very little knowledge of policymaking, the training day gave me a good introduction to the topic and understanding of the different roles involved in policymaking.' Chelsea Fletcher, who helped organise the event said: 'Learning how to present a quick overview of a comprehensive topic and what strategies to utilise to get a viewpoint across was something that everyone can take away for their everyday life – whether or not we end up in politics.'

The next policy training workshop and PAAP will be in Edinburgh on the 13 November 2018. More information can be found on the BES website.

We have also been responding to important consultations in Scotland on proposals for the Brexit transition period in the agricultural sector and the call for evidence at Stage 1 of the Climate Change (Emissions Reduction Targets) (Scotland) Bill. Many thanks for all of you who provided comments and evidence which helped inform the SPG responses.

## BUILDING POLICY MOMENTUM IN WALES

**William P. Kay** | BES Wales Policy Group | @willpkay

The BES Wales Policy Group (WPG) was established in 2017 to bring together academics and policymakers to discuss environmental policy issues in Wales. Following a successful inaugural event in November, the WPG have been working hard behind the scenes establish a programme of activity.

On the 6 and 7 June 2018 representatives of WPG met with representatives of the Scottish Policy Group (SPG), the Northern Ireland Policy Group (NIPG) and the Irish Ecological Association (IEA) for the first annual BES Joint Policy Group (JPOG) meeting. This meeting was a fantastic opportunity for representatives from each of the groups to get to know each other, learn from the successes of the SPG, and identify common challenges and policy issues across regions and share ideas for how to establish a sound policy programme in their country. The meeting was very positive, with everyone feeling energised and motivated to continue building on the policy work in their regions.

In Wales, we have exciting plans for an event in September and more to come in 2019, including an adoption of the SPG's (unsurprisingly) popular "Pie and a Pint" night, where we will be discussing important ecological issues in Wales. We also plan to offer a policy training event in the near future. One of the key challenges for the WPG is to attract interest from all over Wales; hence we plan to spread these meetings across the country from North to South and in between!

Momentum continues to build for the WPG and we look forward to delivering an exciting programme of events in the coming months. If you would like to hear more or get involved, please keep an eye on the BES website. We will be promoting the WPG via Twitter (@BESPolicy), newsletters and blogs and we will be sending out a promotional email to Wales-based BES members soon. WPG representatives will be attending the BES Annual Meeting in Birmingham so if you're there, please do come and find us!



## POLICY

# REFLECTIONS FROM OUR FIRST POLICY FELLOWS

Bethan O'Leary [bethan.oleary@york.ac.uk](mailto:bethan.oleary@york.ac.uk) | Deepa Senapathi [g.d.senapathi@reading.ac.uk](mailto:g.d.senapathi@reading.ac.uk)

The BES introduced its Policy Fellowship last year. The Fellowship offers a rare opportunity to support the career development of mid-career scientists by providing a placement opportunity within government and salary support for this. The aim of the Fellowship is to provide a greater understanding of the science-policy interface for each Fellow to inform career development and promote partnerships between academics and policymakers at the heart of government. The 2017/18 Fellowship is being hosted by the Wildlife and Ivory team within Defra.

The BES Policy Fellowship is awarded through a competitive interview process. For its first year the Fellowship was offered to two researchers, although typically only one will be offered each year. Deepa Senapathi and Bethan O'Leary, our 2017 BES Policy Fellows have each chosen spend 6 months working within Defra supported on a part-time basis and have now both completed their secondments. We asked them to tell us about their experiences in that role.

### BETHAN O'LEARY

My fellowship was based in the Nature Strategy and Wildlife Evidence teams in Defra but also resulted in me working closely alongside colleagues from other parts of Defra, JNCC and Natural England, as well as several external organisations. For my fellowship I was assigned two broad tasks: (1) to develop case studies to support the UK's 6th National Report to the Convention on Biological Diversity (CBD), and (2) to support the evaluation of the Biodiversity 2020 strategy. Both tasks required me to step away from my academic background in marine science and to consider different ecosystems, the

environment more broadly and the challenges in evaluating complex policies and actions.

The aim of the 6<sup>th</sup> National Report to the CBD is to review progress towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and to report on measures that are being implemented to achieve the Aichi Biodiversity Targets. Case studies are intended to support the progress assessment to provide a more in-depth narrative of action taken and their outcomes, evaluate the effectiveness of these actions, showcase good practice, and document experiences from which knowledge gained can be, or has already been, transferred to future practice.

To select potential areas for case study development I first held a number of discussions with the four countries to identify priority areas in which to identify lessons learnt in practice. Research within each of these priority areas was then undertaken to identify potential case studies based on availability of information for evaluation and these were presented to the four countries to secure their agreement to proceed. Case studies were then further researched and developed with the support of key individuals from across the Defra family, and covered topics as wide ranging as agri-environment schemes, dormice reintroduction and eradication of invasive non-native species, amongst others.

To support the evaluation of Biodiversity 2020, I worked with the steering group to develop the framework and specification of the evaluation process. Lessons learnt identified within case studies will also be used to inform the future strategy for nature that will replace Biodiversity 2020 as it comes to its end.

### DEEPA SENAPATHI

I spent my time as part of the Wildlife Evidence team, and working alongside the Nature Strategy team to set up a framework to evaluate the Biodiversity 2020 strategy. While the full evaluation of the strategy is due to be completed in 2019, there were many different components to the evaluation and I specifically worked on evaluating the outputs and outcomes related to climate change adaptation and resilience.

In order to do this, I first needed to produce a logic model framework based on Defra guidelines, which then formed the basis for an expert panel assessment. The panel membership included individuals from policy, delivery agencies, conservation organisations as well as academics and took the form of a two stage evaluation – an online survey followed by a one day workshop.

The aim of this evaluation was to assess the level of progress made towards national and international targets related to climate change adaptation. The questions were based on measurable outputs outlined in the Biodiversity 2020 strategy which respond to the international Aichi targets set by the CBD. In addition to asking the experts to quantify a level of progress, the survey was designed to identify initiatives that had helped contribute to progress but also recognise any significant barriers to progress. The workshop provided the opportunity for experts to have more in-depth discussions on these aspects and also list some suggestion for improvement for future nature strategies. A report has been produced for Defra based on the survey and workshop findings and will be used to inform the wider evaluation process.



### REFLECTIONS ON OUR FELLOWSHIPS

The time on our Fellowship has flown by and we have both now completed our placements. We have put together some insights from our experiences so far:

#### **Policymakers and academics think differently**

Policymakers often have multidisciplinary backgrounds and their experience in using evidence to inform policy means that they think about problems in different terms or from different angles. They also often have a broad knowledge base of the local context or previous projects or policies that have been tried that you may not know about. It also means that policymakers can ask questions differently and understanding what the question actually is that is being asked is really important. For example, a policymaker may ask what the main threat facing a species is when they really mean what is the most imminent threat. The BES Policy Fellowship has given us the experience of working through a thought process to understand what the question being asked actually is.

#### **Policy decisions consider more than just scientific evidence**

Policy decisions have to be consistent with existing policy and they have to balance social, economic, and practical considerations as well as being informed by the best available

evidence. Well-communicated, accessible, and high quality research that addresses complex questions relevant to policy and recognises the wider social and political context is required to maximise the policy-value of research.

#### **Policymakers are really keen to engage academics in policy**

There is a demand for politically, economically, and socially relevant research in government, and continued engagement across sectors provides better access to evidence for policy teams. Since our Fellowships started we have spoken to a lot of different teams and people working in evidence and policy both within Defra and the wider network of delivery agencies. One of the things that surprised us was just how welcoming and interested they are to learn about our Fellowships and research, and how many 'knowledge exchange' or 'policy' fellowships or interns from academia there are, although mostly at PhD level. The challenge is in matching up funding, timescales and expectations between the two sectors.

#### **Timelines for delivery vary significantly between academia and the policy world**

Academics have a longer duration – usually years to gather evidence to answer a particular question. Policymakers have to make decisions based on the evidence available to them at a particular point in time, within a fairly short duration.

#### **Policy is more reactive than academia**

Policy responds to a variety of influences (e.g. social, political, evidential) meaning that it can offer a relatively fast-paced and sometimes reactive decision-making environment, albeit under structured long-term and forward-thinking strategies. Aligning academic research with long-term strategies and engaging policymakers in research can help to pre-empt these instances and ensure evidence responds to policy needs, although unforeseen requirements in evidence will always emerge presenting challenges for both academics and policymakers.

#### **Keep your message short and sweet**

Policymakers are busy people. Learning to communicate your message in one or two pages of accessible text is essential.

#### **Staff within government are more transient than in academia**

There is movement of staff across teams and across departments within government which may not be that dissimilar to the trajectory of early career researchers, but may happen at shorter time scales. This does pose a challenge in terms of continuity of contact but enabling networks such as the BES policy team and Policy Fellow alumni network should help, as they continue to provide access to decision-makers and help bridge the gap following the completion of a fellowship.

## FRIENDS OF THE SOCIETY

# LONG-TERM ECOLOGICAL EXPERIMENTS FOREVER!

**Ben Sykes** | Executive Director, ECT | [ben.sykes@ecologicalcontinuitytrust.org](mailto:ben.sykes@ecologicalcontinuitytrust.org)



The Ecological Continuity Trust (ECT) is celebrating its tenth anniversary this year. The landmark will be honoured with a unique Interactive Thematic Session at BES2018 in December on the challenges and opportunities faced by long-term experiments (LTEs) in the UK, but what has ECT achieved and where is it going in the next ten years?

The ECT was formed in 2008 as a charitable body and not-for-profit company, with core funding support from the BES, in direct response to the loss of long-term ecological experiments across the UK. Our vision was, and continues to be, the development of a strategic network of LTEs that involve genuine ecosystem manipulations in the real world and true replication for statistical purposes. That vision includes safeguarding existing high-quality experiments, as well as facilitating new experiments, and we can point to successful examples of both.

The Buxton Climate Change Impacts Laboratory (BCCIL), established in 1994 on private land near Buxton in Derbyshire, looks at the impact of various climate change 'treatments' on the health and biodiversity of calcareous grassland. In 2016, it faced an uncertain future until ECT intervened with a combination of bridging funds and management changes that resulted in the experiment securing fresh NERC grant funding. Going strong again today, BCCIL remains the UK's longest-running climate change experiment.

The RainDrop experiment is a new LTE established in 2016 at Wytham in Oxfordshire, with a planned 100-year lifetime. Facilitated by ECT, RainDrop is a collaboration between the University of Oxford, the Open University and the Patsy Wood Trust investigating how changes in rainfall affect grassland resilience to environmental change.

ECT is currently custodian of 27 active LTEs across 22 sites in the UK. These cover habitats ranging from grassland to woodland to upland peat bog, and experimental treatments ranging from land management techniques to manipulations designed to mimic the effects of changing climate. Our 27<sup>th</sup> active LTE has just been added to the register this summer – the Peatland-ES-UK project based at the University of York focuses on the restoration of blanket bog vegetation for biodiversity, carbon sequestration and water regulation. Active for seven years, it includes three sites in the north of England.

Looking to the future, we are delighted to announce that the BES is providing core funding support for the next three years. This has been a vital component of our ability to secure additional funding from third parties and has coincided with my appointment as ECT's new Executive Director. As a qualified science communicator and manager with a 22-year career at the Research Councils under my belt, I am looking forward to working with many of you to fulfil this important role. ECT is small charity battling to stem the tide of LTE closures with growing external pressures on longer-term research funding. I am in no doubt that, without the ECT's efforts over recent years, the nation's network of LTEs would be in a far more parlous state than that which we find today.

# CHARTERED INSTITUTE OF ECOLOGY AND ENVIRONMENTAL MANAGEMENT



**Sally Hayns CEcol MCIEEM** | Chief Executive Officer, CIEEM  
T: 01962 868626 | Email: [enquiries@cieem.net](mailto:enquiries@cieem.net)



## 2018 CIEEM MEDAL

We are delighted to announce that the 2018 CIEEM Medal has been awarded to Dame Georgina Mace DBE FRS. Professor Mace is, of course, well known to BES members as a former President of the Society and as a highly influential ecologist who has made an outstanding and life-long contribution to ecology and environmental conservation.

Professor Mace has had a distinguished career that includes roles such as Director of Science at the Institute of Zoology (Zoological Society of London) and Director of the NERC Centre of Population Biology at Imperial College, London. Her current role is as Professor of Biodiversity and Ecosystems and Head of the Centre for Biodiversity and Environment Research at University College, London.

Notable areas of national and international policy work include helping to develop and test criteria for listing species on the IUCN's Red List of threatened species, involvement in the Millennium Ecosystem Assessment, the UK National Ecosystem Assessment and the Natural Capital Committee.

Professor Mace will be presented with the Medal at the Autumn Conference in November.

## 2018 BEST PRACTICE AWARDS

In June we held our annual Awards Luncheon at the Merchant Taylors' Hall in the City of London. The Awards Luncheon provides an excellent opportunity for the profession to recognise and celebrate some outstanding examples of applied ecological and environmental management practice.

Among the Best Practice winners was the *Dove Stone Upland Restoration Project* led by the RSPB and United Utilities which won the Large-scale Nature Conservation Project Award for its significant peatland restoration work. The Environment Agency and Box Moor Trust's *Bringing Back the Bulbourne* chalk stream restoration initiative won the Small-scale Nature Conservation Project Award. The Yorkshire Peat Partnership, led by Yorkshire Wildlife Trust, was a deserving winner of the Innovation Award whilst the Knowledge Sharing Award was won by Manchester City Council's Green and Blue Infrastructure Strategy.

Graduate member Helen PietKiewicz, formerly studying at Nottingham Trent University, won the Postgraduate Student project prize with her research report on *Salinity-induced changes in the community composition of benthic macroinvertebrates at Pasturefields saltmarsh, Staffordshire, UK* whilst another graduate member, Clare Knight of Turnstone Ecology, was the winner of a hotly-contested Promising Professional category.

This year the judges were able to award the much-prized Tony Bradshaw Award for a project that is considered to be outstanding in any of the Best Practice categories. The award went to Dialogue Matters and the National Trust which had scooped the Best Practice in Stakeholder Engagement prize for its work at Hatfield Forest in Essex. The two partners had undertaken an extremely effective public engagement initiative to work with stakeholders, resolving highly contentious issues around recreation, access and sensitive habitats at this mediaeval hunting forest which is also an SSSI and National Nature Reserve.

## AUTUMN CONFERENCE

Bookings are now open for our Autumn Conference on *Advances in Ecological Restoration and Habitat Creation*, which will be held in Glasgow on 20-21 November. The theme of the conference is *Effective Ecological Restoration and Habitat Creation*.

For further information please visit our website at [www.cieem.net](http://www.cieem.net).

## EVENTS

**3–4 September, University of Bergen, Norway**

### **BES/NØF Symposium: Treelines and Beyond**

Leading practitioners and scientists from across Europe explore issues around the treeline ecotone, with a web-linked panel discussion between Norway and Scotland.

**3–4 September, University of Leeds, UK**

### **8th Annual Showcase for Innovative Field Teaching**

#### **Teaching and Learning SIG**

Run by the Enhancing Fieldwork Learning team in collaboration with the BES, Water@Leeds and Esri UK. The event aims to share ideas and practice with regards to innovative field teaching and learning with an emphasis on the use of mobile technologies.

**9–15 September, Lisbon, Portugal**

### **Field techniques workshop**

#### **Plant Environmental Physiology SIG**

Our workshop provides a unique opportunity for MSc, PhD students and early career researchers to gain hands-on experience and training in plant ecophysiology techniques from leading scientists and manufacturers.

**10–14 September, Belfast, UK**

### **9th International Symposium on Testate amoebae (ISTA9)**

#### **Peatland Research SIG**

The BES Peatland Research Group will be present at ISTA9. Please join us at a special meeting in the Ulster Museum to discuss the importance of peatlands science and peatland conservation.

**17–20 September, High Wycombe, UK**

### **Movement Ecology, moving forward your research and career - Early Career Researcher residential course**

Learn how to move forward your data analysis skills and your career. Movement ecology workshops, skills training events, mock interviews and more – led by Samantha Patrick (Samantha.Patrick@liverpool.ac.uk), Garrett Street, Luca Börger (l.borger@swansea.ac.uk).

Registration deadline: 9 September 2018

**19 September, Charles Darwin House, London, UK**

### **Integrating knowledge and approaches across microbiomes: from plants to humans and soil to sea**

#### **Microbial Ecology SIG**

Given that all multicellular organisms support a microbiome, this complex metagenome has the potential to unite organismal, evolutionary and ecological biologists from traditionally disjunct areas of research. As more biologists become interested in the function and influence of the microbiome, there is significant potential for knowledge exchange between researchers working in this area. The aim of this one-day meeting, jointly hosted by the BES, the Microbiology Society and the Society for Applied Microbiology, is to discuss approaches and findings from across a broad suite of environments and hosts. Registration deadline: 3 September. Please feel free to contact Rachael if you have any questions: microbial-sig@britishecologicalsociety.org

**20 September, Charles Darwin House, London, UK**

### **Early Career Researcher Workshops #BESAG2018**

#### **Aquatic Ecology SIG**

Registration via Eventbrite:

**Vegan package in R** - Dr Andrew Beckerman (University of Sheffield). We will introduce the vegan package in three steps, moving from what your data will look like and how to organise and visualise it through to two of the most frequently used methods in ecology: principle components analysis (PCA) and NMDS.

**Leadership skills in academia** - Prof Owen Petchey (University of Zurich). Do you wonder what it takes to be a great leader? Or question whether you have what it takes? Does attending leadership and management courses make your blood run cold? If you answer yes to any of these, this workshop is for you. The overarching aim of the workshop is to pique your interest in leadership. You need to bring only yourself and an open mind.

**21 September, Charles Darwin House, London, UK**

### **Annual Meeting - Advances in Aquatic Ecology #BESAG2018**

#### **Aquatic Ecology SIG**

Registration via Eventbrite

World-leading aquatic ecologists will discuss their recent findings and priorities for future research, which will, as always, spark interesting discussions. Time will be set aside for discussion during the meeting and there will also be ample opportunity for networking and a social in the evening.

Confirmed speakers: Sophie Cauvy-Fraunie (France); Owen Petchey (Switzerland); Chrystal Mantyka-Pringle (Canada); Steve Ormerod (UK); Sinead Collins (UK); Jasmin Godbold (UK); Kerry Howell (UK); ECR Award Winner 2018

**12 October, University of Reading, UK**

### **Exploring the potential of citizen science approaches for development of undergraduate research skills**

#### **Joint workshop of the Teaching and Learning and Citizen Science SIGs**

This event is specifically looking at how citizen science can support learning in higher education. There is an open call for contributions, so do come along to be inspired and learn from each other. Details at: [besteachingandlearning.wordpress.com](http://besteachingandlearning.wordpress.com) or contact Alice Mauchline [a.l.mauchline@reading.ac.uk](mailto:a.l.mauchline@reading.ac.uk).

**30–31 October, Cambridge University, UK**

### **Climate change adaptation in the natural environment: how can progress and effectiveness be measured?**

#### **Joint event with the Climate Change Ecology SIG and Committee on Climate Change**

This workshop will bring together scientists, policy makers and practitioners to develop ways of evaluating adaptation programmes, such as the National Adaptation Programme, including through the use of indicators. Register through the Eventbrite link at [britishecologicalsociety.org/climate-change-ecology](http://britishecologicalsociety.org/climate-change-ecology).

## SPECIAL INTEREST GROUP NEWS



### TEACHING AND LEARNING GROUP



We have been busy in our first full year and we are pleased to report on our first symposium which we held in Birmingham in April. The event – Advancing the synergies between teaching and research – welcomed delegates from around the UK. Speakers covered not only examples of research-led teaching, but also ways in which we can include citizen science research within education. Professor Jeremy Pritchard gave a stimulating keynote with his views on TEF and some examples of his innovative teaching within ecology. Before lunch, Dr Nick Kettridge and the delegates braved the rather rainy weather to showcase Birmingham's own research-led teaching facilities, visiting the Birmingham Bog and the Ecolab sites on campus. The symposium closed with research on how good management practises can maximise the links between research and teaching-focussed staff to generate real centres of excellence within HE. You can read a full report of our meeting on the *Functional Ecology* blog: [functionalecologists.com/2018/05/17](http://functionalecologists.com/2018/05/17)



### PARASITES & PATHOGENS GROUP

With ever improving access to remote sensed data and open source development increasing the affordability and accessibility

of spatial data, how to both access and analyse such data in response to parasite transmission is evolving rapidly. The Parasites and Pathogens Special Interest Group organised an "Introduction to Spatial Statistics" workshop in Glasgow as a follow-on to the Ecology and Evolution of Infectious Diseases conference (EEID 2018). The 1.5-day event covered accessing, exploring and analysing spatial data using a range of different approaches.

First, we discussed using Google Earth Engine to access, analyse and download remote sensed imagery, including hands on tutorials and code examples from Andrew Cutts of ACGeospatial. We ran through the key features of the popular and widely used R package, SpatStat, for exploring and identifying spatial point patterns with Shaun Keegan, a PhD student at Liverpool University, and continued our statistical exploration with R-INLA. This meant I took everyone on a whistle stop tour of Bayesian theory, model specification and visualising spatial correlation via zombie alerts in Florida and bacterial infections in Benin. Finally, Simon Hoggett of BES Publishing and Helen Eaton of Royal Society Publishing gave some key publishing pointers including code and data management.



### CLIMATE CHANGE GROUP

The Climate Change Ecology group has recently updated its mailing list. If you want to join the list, please drop us an email at: [climate-sig@britishecologicalsociety.org](mailto:climate-sig@britishecologicalsociety.org)

You can find us on Facebook, Twitter and through the SIG webpages on the BES website. We also have a blog. The most recent post at the time of writing is by James Pearce Higgins: School children show how dry weather affects soil invertebrates: [besclimatechange.wordpress.com](http://besclimatechange.wordpress.com)

## CITIZEN SCIENCE GROUP

Earlier this year we welcomed several new people onto the committee. This will help our SIG continue to thrive and encourage excellence in citizen science in ecology, by supporting BES members and professional citizen science practitioners who work in ecological citizen science. Although our focus is on ecological science, we continue to look for cross-disciplinary knowledge exchange and to encourage innovation and creativity. The support we provide is primarily through our meetings and mailing list. As ever, if you have any suggestions for our group, please get in contact.

There continues to be a lot of interest in 'citizen science' (whether that is engagement by the 'general public', expert volunteers or the public as stakeholders). For example, some of the NERC Engaging Environments projects are interested in supporting. Several of the SIG members are involved in those projects and we look forward to continued collaborations.

## PLANT ENVIRONMENTAL PHYSIOLOGY GROUP

We've recently had to update our mailing list following introduction of new data protection laws. If you aren't receiving our emails and would like them, or if you just want to join us, please email our communications secretary Scott Davidson (sjdavidson989@gmail.com) who will add you to our new list.

**ECR Symposium: Norfolk Coast May 14–16 2018. Report by Grace Hoysted and Ashleigh Elliott, University of Leeds**



Our coastal walk with National Trust Guides at Blakeney Point, Norfolk

Plant physiologists from Europe (including Czech Republic, Ireland and Switzerland), the USA and all corners of the UK converged at the YHA in Sheringham for three days of sun, sea and science. The symposium started with a welcome mixer with each delegate introducing themselves and their research. After dinner, we listened to talks from Dr. Gill Malin and Professor Andrew Watkinson (UEA) who discussed their research and careers to date. Day two started at Blakeney Point National Nature Reserve. We were met by guides who took us on a scenic coastal walk along a rare vegetated shingle habitat, followed by the poster session. Due to the intimate nature of the symposium, we were able to visit every poster and discuss the work presented in a friendly and approachable atmosphere, quite different from bigger conferences which can be overwhelming. This was followed by a career session where members of the PEPG committee shared their career stories in a frank, open and honest manner, including the failures and rejection which are an inevitable part of everyone's career but aren't often mentioned. After a long day of activities everyone participated in the now-traditional PEPG quiz, which was a great opportunity to relax together. On the final day we listened to delegate oral presentations, allowing us to share our research in more detail and practise our presentation skills. Talks covered a range of plant physiology, from the effect of CO<sub>2</sub> on arbuscular mycorrhizas, through to flowering and fruiting in *Arabidopsis*. The poster prize went to Sarah Carroll (University of Sheffield, UK) for her poster on the guard cell wall structure and the talk prize went to Alison Tidy (University of Nottingham, UK) for her talk on optimising Brassica crops for the future. The prizes for both the best

poster and best talk were sponsored by *Plants, People, Planet* – the new cross disciplinary Open Access journal from the New Phytologist Trust.

## PEATLANDS RESEARCH GROUP

Since our last *Bulletin* update, the Peatland research group SIG has seen a change in lead, with Bjorn Robroek (University of Southampton) taking over the group secretary role. Until the BES annual meeting in Birmingham, Bjorn and Sunitha Pangala (vice-secretary; University of Lancaster) will oversee the activities of the SIG, following a re-launch of the SIG at the BES annual meeting.

We have an active group of involved committee members, but we are also looking for new energy and enthusiasm. Please join us at one of the socials at the BES meeting in Birmingham or get in touch for more information (peatlands@britishecologicalsociety.org)

## MACROECOLOGY GROUP

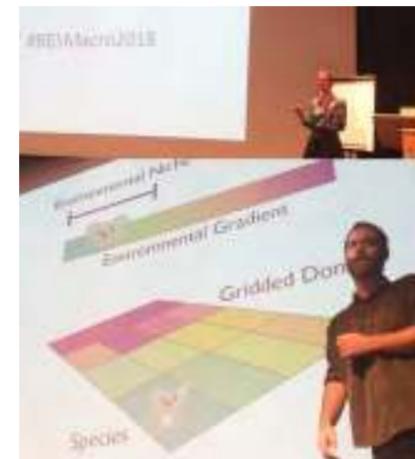
@BESMacroecol

### Annual Meeting. Report by Kevin Healy (postdoc rep)

On July 10<sup>th</sup>, 100+ macroecologists, UK and international, descended on St Andrews for the Macroecology SIG's annual meeting, held in Scotland for the first time. The next two days offered a diverse programme with >60 lightning talks, mostly from students and post-docs, which ranged from the macroecology of hydrothermal vents to surveying heathland birds using microlight aircraft. There was a thought-provoking set of invited plenaries from established macroecologists, but a highlight—continuing our strong tradition of focusing on early career researchers—was the student plenary by PhD student Alex Skeels (Australian National University). Alex delivered

a fantastic talk on the geography of speciation, featuring a #discokoala.

The 'formally informal' meeting also included a lively poster session, an impromptu show-and-tell on 'tools for efficient workflows' and other workshops, while the break-out discussions put some of macroecology's best brains to work on topics like "where are all the applied macroecologists?". It wasn't all hard work, however, with the first-ever macroecology ceilidh complete with macroecology-inspired dances such as "The Death Island Reel". The conference was a great success and the SIG continues to welcome many new members from across the globe. Next year we head to the University of Exeter's Penryn Campus for more macroecology and fun.



SIG Secretary Natalie Cooper opens the BES Macro 2018 Annual meeting (top). Student plenary awardee, Alex Skeels, introduces us to #discokoala

## MOVEMENT ECOLOGY GROUP

The Movement Ecology SIG has been busy over the summer, with three events including overseas activities! And in September we will organise our first Movement Ecology Early Career residential course. Here the details.



### Movement Ecology SIG travels to Canada!

The BES Movement Ecology SIG hosted their first international event! Hosted 18–22 June on the campus of the University of British Columbia (UBC), Vancouver, Canada, surrounded by mountains and the ocean, Luca Börger, Garrett Street, and Marie Auger-Méthé led the workshop Animal Movement Analyses: A to Z, with lots of R. Through lectures, hands-on R tutorials, and a small field trip, participants were introduced to a wide range of analyses (e.g. home range analysis, step selection function, hidden Markov model, biologging). The 30 participants came either from the host university (UBC) or from 14 others universities/organizations from across North America. Thanks to the support from the BES, Biodiversity Research Centre, Wildlife Computers, Institute for the Oceans and Fisheries, and the Department of Statistics, the costs of the workshop, food, and accommodation were mostly subsidized. Many participants mentioned that this allowed them to join, as they generally cannot afford the cost of such workshop. We received great feedback from the participants, many highlighted that they loved the mixture of teaching styles. While we believe this was a success, we will use the feedback to improve all our future workshops.



### Movement Ecology SIG Social Event at ISEC 2018 (St Andrews)

The International Statistical Ecology Conference (ISEC) was held in St Andrews, Scotland 2–6 July. Movement Ecology, with 6 sessions, was the most popular topic. So we organised an evening social event at the Madras Rugby Club, to bring together researchers from different subject areas, especially early career researchers. Theoni Photopoulou and Marie Auger-Méthé organised the event, with attendance also of SIG members Luca Börger and Jonathan Potts. We had expected about 30 people and the final count was over 100(!) researchers from across all career stages. Over drinks and snacks we listened to Roland Langrock, Stacy deRuiter and Juan Morales, telling how their research and career developed, followed by Marie Auger-Méthé, Theoni Photopoulou and eight PhD students and postdocs. Chris Grieves (*Methods in Ecology and Evolution*) concluded the presentations before the pizzas arrived. The event continued until late, including a lively football game on the outside pitch. This has been our biggest event - thanks for the enthusiasm and thanks received! And a big thank to funding from the BES, *Methods in Ecology and Evolution*, and *Journal of Animal Ecology*.

**BES Move 2018 – our Annual Meeting and Workshop moves to the beach in Swansea**

For our 2nd Annual Meeting we moved to the University of Swansea. The theme was 'Connecting biologging technology to biological questions and data analysis methods' and on 9 July, on a very warm, sunny day, 35 attendants convened to the Department of Biosciences. We listened to presentations from seven invited speakers from the UK, France and Argentina, followed by flash talks and posters by 12 students and postdocs. Two prizes were up for grabs: Tommy Clay (Liverpool) won one for the best

flash talk presentation, and Will Kay (Swansea) for the best poster. In the afternoon lively and stimulating debates emerged during the workshop on linking biologging technology to questions and modelling methods and working groups were formed and will continue the discussion after the meeting. After a demonstration of the Vizualisation Suite for biologging data at the Swansea Lab for Animal Movement (SLAM) and the DDMT software developed by Wildbyte Technologies Ltd., we moved to the beach for a BBQ – until late into the night, enjoying the glorious weather! Thanks to funding from BES, Swansea University, Centre for Biomathematics, Wildbyte Technologies Ltd.





**AQUATIC  
ECOLOGY  
GROUP**

Looking for a job in aquatic ecology?

#Job #Postdoc, #PhD, #Internship,... Find the freshest job offers in marine and freshwater ecology every Thursday on Twitter.

@BES\_AquaEco

#Thursdayjobday

Tag us to share your job offers!

# DON'T MISS OUT

## THE LAW HAS CHANGED

The General Data Protection Regulation (GDPR) has now come into force and we now need your consent to stay in touch;

- Say yes to hear about our grants
- Say yes to keep up to date with the latest BES news
- Say yes hear about our events, abstract submissions and deadlines
- Say yes to hear about our fundraising initiatives to support ecologists

# BRITISH ECOLOGICAL SOCIETY

Log in to your member profile or contact [dataprotection@britishecologicalsociety.org](mailto:dataprotection@britishecologicalsociety.org) to update your email preferences.

**MAKE SURE YOU DON'T MISS OUT!**

## GRANTS

# ATTENDING THE ANNUAL MEETING WITH A BES TRAVEL GRANT AN INTERVIEW WITH SANGEETHA VARMA

Siri McDonnell | Grants and Events Officer | [siri@britishecologicalsociety.org](mailto:siri@britishecologicalsociety.org)

We are pleased to be able to support a limited number of students and postgraduate research assistants who are a citizen of, and working in, a 'low-income economy' or 'lower-middle-income economy' country (according to the World Bank categorization) to attend our Annual Meeting each December. These grants are awarded on a first come first serve basis and applications will open in September 2018. I spoke to grant awardee Sangeetha Varma about her experience at Ecology Across Borders last year in Ghent.

### What is your name and where did you travel from?

My name is Sangeetha Varma, research scholar from Central University of Kerala, India, and I have been researching pollination biology for the last 4 years.

### What impact did receiving this grant have on you personally and the development of your career in ecology?

I had the opportunity to attend the 2017 BES Annual Meeting, Ecology Across Borders, in Ghent. This was my first international scientific meeting with 1500 delegates from more than 60 countries. I had a rare opportunity to present my research and ideas to an international audience which has been very useful for my research in India. Moreover it has increased my confidence to face an international community.

I presented a poster about species interaction. My presentation received critical and constructive questions from the audience which helped me

develop my ideas. The conference in general discussed a variety of interdisciplinary topics, both regionally and globally such as climate change, policy and management in agriculture.

### What did you enjoy most about Ecology Across Borders 2017?

I enjoyed each session at the conference, especially the poster session which gave me a lot of time to interact with many people from my area of research. I came away with a lot of new ideas.

I really appreciate the work of the organizers to make this event run successfully. When you come from a developing country like India, the opportunity to participate at such an international conference is rare – the BES made my dream come true. I have been accepted to present at another international conference in the USA but due to the unavailability of funds, I have had to drop out of my dream half way. I'm really proud and happy that the BES awarded me a travel grant so I could be there at EAB.

### Do you have any other specific feedback or comments that you would like to make on your award?

I have one request – the BES should hold a future conference in my country, India! It would definitely inspire thousands of students and give them a chance to present to an international community. Of course, I will be one of the dedicated volunteers to make it happen successfully!



**If you wish to apply for a Travel Grant to attend our Annual Meeting, please note the same conditions apply as the standard BES Training & Travel Grants. In summary you need to:**

- Be a student/postgraduate research assistant
- Be citizen of and working in a 'low-income economy' or 'lower-middle-income economy' country
- Have a talk or poster presentation accepted at the meeting
- Be a member of the BES

This counts as a standard Training & Travel Grant, therefore the following applies: no applicant may receive more than two Training & Travel Grants in any five year period. There must be at least three years between grants.

Grants of up to £1000 are available.

To apply, head to our website: [britishecologicalsociety.org/funding/training-travel-grants](http://britishecologicalsociety.org/funding/training-travel-grants)

## MEMBER STORIES



### SABRINA TRÄGER

**Tell us about your background and why you joined the BES.**

I specialize in plant ecology in grassland habitats. I did my PhD in Canada, working on root ecology with study sites in Sweden. Currently, I am a postdoc focusing on landscape genetic analyses, in Estonia.

The BES allows me to stay connected with the European ecological community.

### What inspires you most about ecology?

I am fascinated by the complexity of interactions between organisms, specifically plants and their environment. The fact that those interactions act on different scales, from molecular to global, makes ecology even more inspiring to me.

### What experience do you consider to be the most significant in your career or studies to date?

Having had the opportunity to study and work in different places and environments, Asia, Europe and North America, did not only allow me to get to know interesting people and their work but also taught me to value the possibilities, knowledge, and abilities I have.

### What advice would you give your younger self?

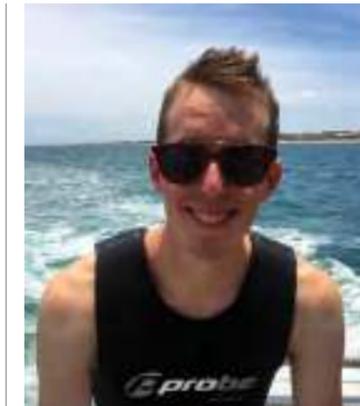
Be open to different ideas, concepts, cultures, and people. Stay as focused as you are but don't be afraid of detours as they are valuable and can be helpful in discovering what you really want and often widen the view on other aspects that you didn't consider before.

### What is your favourite organism and why?

I don't have a single favourite organism. However, I am particularly interested in plants since they seem inactive but have the same levels of interactions like animals, including movement or communication between individuals. In addition, plants are the vital beginning of the food chain.

[sabrina.trager@ut.ee](mailto:sabrina.trager@ut.ee)

#Conservation #PlantEnvironmentInteraction  
#PlantGenetics



### ALBERT PESSARRODONA

**Tell us about your background and why you joined the BES.**

I am currently a PhD student at the University of Western Australia where I investigate how kelp forest ecosystems can cope with climate change. I previously worked in the UK and my

natal Mediterranean Sea. I joined the BES to get inspired by ecologists working on similar (and dissimilar) topics.

### What inspires you most about ecology?

I am fascinated by the complexity of nature. I love the feeling when you get excited about a theory to explain a process or observation and you cannot sleep at night.

### What experience do you consider to be the most significant in your career or studies to date?

The first time I helped out a marine ecologist (my first supervisor) in the field. I remember thinking: this is really your job? Going diving and studying what you love? Sign me up!

### What advice would you give your younger self?

It is OK to be wrong.

### What is your favourite organism and why?

My favourite organisms are kelps of course! They are the biological powerhouse of many temperate reefs worldwide.

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@pessa\_3

#MarineEcology #ClimateChange #Adaptation

Our members are central to what we do. Our community is made from people who come from a range of backgrounds, all of whom have incredible achievements and experiences. This is an opportunity for members to share those stories, connect with others and reflect on the impact that membership has had on their career.

We would love to hear your story in the next Bulletin. Get in touch with Grace to find out how: [grace@britishecologicalsociety.org](mailto:grace@britishecologicalsociety.org)

## OBITUARIES



### DAVID GOODALL (1914–2018)

My friend and distinguished colleague, David W. Goodall, passed away on 10 May, 2018, aged 104. David was born 4 April, 1914 in Edmonton, England. He received his B.Sc. degree in 1935 and a Ph.D. in 1941 from the Imperial College of Science and Technology, London. His doctoral research on assimilation in the tomato plant was performed at East Malling Research Station in Kent. Though he applied to join the Royal Navy, his research was considered more important for the war effort.

In 1948, David accepted a Senior Lecturer position in Botany at the University of Melbourne, Australia and he received a D.Sc. degree from that institution in 1953. His career included positions at the University College of the Gold Coast, the University of Reading, several divisions of the Commonwealth Scientific and Industrial Research Organization (CSIRO) in Australia, the University of California Irvine, and Utah State University.

David retired from the position of Senior Principal Research Scientist in CSIRO in 1979. He continued to work until 1998 as an Honorary Research Fellow in the CSIRO Division of Wildlife and Ecology and then from 1998 until 2018 as an Honorary Research Associate at the Centre for Ecosystem Management at Edith Cowan University. During his career, David supervised four Ph.D. and ten Master's students. He served as Editor-in-Chief of the 30-volume series "Ecosystems of the World", completing the final volume in 2005.

Among the honours and awards received by David were a Doctor of Science Nat. honoris causa from the Università degli Studi di Trieste, Italy in 1990, the Distinguished Statistical Ecologist Award from the International Association for Ecology in 1994, the Gold Medal of the Australian Ecological Society in 2008, and an Honorary Membership of the International Association for Vegetation Science (IAVS) in 1997. A special issue of the journal *Plant Ecology* was dedicated to Goodall in 2015 and he was made a Member of the Order of Australia in 2016 for "significant service to science as an academic, researcher and

author in the area of plant ecology and natural resources management."

David's research made important contributions to plant physiology, ecosystem modelling, and the statistical analysis of ecological data. In a series of papers entitled "Objective Methods for the Classification of Vegetation I, II, III and IV", he published pioneering research that laid the groundwork for the development of numerical methods to analyze vegetation and coined the term "ordination" for techniques that arrange vegetation samples in a coordinate space, rather than dividing them into groups. When I was a young student at the University of Tasmania, Goodall's papers on quantitative methods influenced me profoundly and stimulated me to undertake a Ph.D. on ordination methods and pursue a career in vegetation analysis.

I first met David in 1988 at a conference of the IAVS in Vienna. We struck up an instant friendship and he told me anecdotes about his early work on vegetation analysis. His first application of principal components analysis to the ordination of vegetation was done at the University of Melbourne using a mechanical calculator. The computations took about six months to complete, after which he repeated the entire analysis to check his results. We remained in touch by correspondence and met up on several occasions over the years, most recently at the IAVS conferences in Lyon, France, in 2011 and Perth, Australia, in 2014. I found David to be an engaging and outgoing man, who enjoyed a good dinner and a few glasses of wine. His interests extended beyond science, as an actor and singer in theatre and musical productions.

In recent years, David's quality of life had deteriorated greatly. He could no longer work in the field, he lost his senses of taste and smell, and his eyesight became too weak to read or communicate via email. When faced with the reality that he could no longer live independently, he made the decision to voluntarily end his life at a clinic in Liestal, Switzerland. For several decades, David had been an advocate for the legalization of voluntary euthanasia in Australia. Though I am saddened to have lost a friend and colleague, I am glad that David was able to end his long and productive life with dignity and on his own terms. He will be missed.

Peter Minchin



### JENNIFER SHAY (1930–2018)

Dr Jennifer Shay, who has died at 87 in East Yorkshire, was a renowned ecologist and field biologist who taught at the University of Manitoba for 34 years and was a dedicated member of the British Ecological Society. An Officer

of the Order of Canada, she taught both in botany and landscape architecture, served on nearly 100 graduate committees, and published more than 50 scientific papers. She was a lifelong champion of conservation and spoke on environmental issues through speeches, workshops, newspaper articles and media appearances.

Born at Sunny Bank in Hull in 1930, she became passionate about the natural world from an early age. In 1952 she gained a BSc in Biology from Bedford College, University of London. She then became the first female employee on the scientific staff at the Field Studies Council, and worked there for five years.

She travelled to Canada in 1957, intending to stay for one year, but ended up living there for 34. Working as a research assistant at Manitoba University, she was surprised to discover that students were not required to undertake any observational or field study. In 1966, she was able to address this when a timely legacy allowed the university to purchase a field station and Dr Shay became its founding director, a position she kept for 20 years.

On her return to the UK, she served on the then-called BES Public and Policy Committee. Former BES Policy Manager Ceri Margerison gave her account of working with Dr Shay. 'Jennifer brought wisdom and insight into the issues being considered by Policy Committee. Often Jennifer would sit quietly and contemplatively, letting others have their say, before contributing her views in a way which immediately shone a light on tricky problems. Her appreciation of the importance of evidence-based decision-making was apparent in her generous decision to support the policy function at the Society directly by contributing to fund the role of a Policy Officer over a number of years'

BES Chief Executive Hazel Norman added her appreciation of Dr Shay's contribution to the work of BES; 'During Jennifer's time on the Public and Policy Committee from 2008 to 2011 a lot was achieved. Our work with the devolved nations increased considerably and the BES Scottish Policy Group was established. We established an annual policy training event for researchers and fed into the development of IPBES. We held a joint meeting with Natural England on 'Climate Change Adaptation and Mitigation', a joint workshop with the UK Biodiversity

Research Advisory Group and a joint Parliamentary reception with the Chartered Institute of Ecology and Environmental Management. We also worked with the Centre for Ecology and Hydrology, the James Hutton Institute and the Royal Society of Biology in the establishment of the Natural Capital Initiative'

Our gratitude is extended for the generous funding that Jennifer and her husband Tom Shay have given to the BES to support the role of Policy Officer – a role which means we can promote policy informed by ecology. Dr Jennifer Shay will be missed by family, friends and the ecological community.



### BEN COLLEN (1978–2018)

On the 19 May 2018, Ben Collen, a Reader in conservation biology at University College London and an active member of the BES Conservation SIG, died aged just 40 from bone cancer. Ben's contributions to advancing ecology and conservation are immense: for example, he developed the conceptual and analytical basis for the Living Planet Index and the comprehensive data set that informs the WWF Living Planet Report. Ben also helped develop the sampled approach to the Red List Index, a critical tool for understanding the extinction risk of lesser known taxonomic groups. His appointments were many and varied, including an honorary research fellow for UNEP, and membership of multiple IUCN Red List committees. But Ben's contributions to science go further than producing high impact research: Ben was a genuinely caring person who was dedicated to progressing the career development of his students and early career colleagues. He was a gifted communicator, who would always lighten the mood of a meeting and find the fun in even the most tedious tasks. Ben had a gift for collaboration, and a strong sense of inclusivity: he knew how to bring people together, and get the best out of them. Ben never took himself too seriously, and was more in love with life than in love with himself: his passion for conservation transpired in everything he did, and he has undoubtedly inspired many students to pursue a career in conservation science. Ben will be greatly missed by his colleagues and friends around the world: not only for his science, but for his wit, generosity, and warmth.

Nathalie Pettorelli

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University College Cork

Key Dates:

Abstract submission & Registration: October 2018

Registration closes: November 2018

Exact dates will be announced shortly

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## ACCESSIBILITY NETWORK

# MENTAL HEALTH IN ACADEMIA



Dr Lesley Batty | drbatty1@gmail.com

**The rate of mental health issues within academia is higher than that of the general population. Here, two members from different career stages share their experiences and offer some advice on how to get support.**

In 2017 Times Higher reported the prevalence of mental health issues in academic staff, with 43% exhibiting symptoms, two times that of the general population. I am one of those people, finding myself with a long term mental health disability leading to a major breakdown in 2015, necessitating a re-evaluation of the way I work.

Whilst work was only one contributing factor, I think many of us are finding that the increasing commercialisation of HE and highly competitive environment can be detrimental to mental health, particularly for those with an existing condition. We need to think about what makes it such a pressured environment and to challenge some of the accepted norms of working across the whole sector that compromises wellbeing and that all-important work-life balance.

I think part of the issue we have now is the idea that we should be accessible 24 hours a day. I'm sure we all have colleagues who seem to be able to survive on a few hours' sleep a night and live and breathe their work which is great if they enjoy that, but this has become something of an expectation of everybody, which is

unrealistic. It is hard to define where the pressure comes from, maybe it is societal, peer pressure or the lack of boundaries within the typical academic job. For young academics, the shortage of posts and the race for that elusive permanent job, adds to this issue significantly.

There is no magic bullet here and each person will need to find the things that work for them, but here are some actions I have taken that have helped me to stabilise my mental health and wellbeing.

The most important thing is to talk to someone – find a colleague or professional to share your concerns with. It was a significant challenge to admit that I was struggling or that something had upset me. I have managed to avoid some potential melt-down moments by sharing them with a trusted colleague.

Make sure you create your own boundaries that effectively separate work from home life. I never look at emails outside core office hours and I also avoid taking physical work home with me. My home is exactly that, and I can focus exclusively on other parts of my life that help me keep

perspective. I also have routines in place that help me switch off before I go home: making a list of tasks for the next day, clearing my email inbox, parking a distance from my building so I have to walk, all help me to clear my mind.

Make space in the day for a break and get out of the office. If you are unwell, don't feel guilty about it, take the time to get yourself in a better place otherwise you are storing up a bigger issue.

These may seem obvious and there is a lot more to managing your mental health than these, but it's a start and the more openly we talk about it, the more inclusive our working environment will be.

**For anyone in need of support, the Mind website is a great resource ([www.mind.org.uk](http://www.mind.org.uk)) or if you are in immediate distress call the Samaritans on 116 123.**

## ACCESSIBILITY NETWORK

# I'VE GOT 99 PROBLEMS AND PHD IS ONE



Chanida Fung | PhD researcher and Graduate Teaching Assistant, University of Reading

## What would you think if I told you I had a mental health problem?

Mental health is a lot more prevalent than you may think. In the UK, roughly one in four people experience mental health problems every year (McManus *et al.*, 2009). In the case of PhD students, one third are at risk of being affected by a common mental health disorder (Levecque *et al.*, 2017).

The topic is a tough and sensitive issue, and is only starting to be discussed more openly. In universities there has been a recent effort host talks and workshops on the topic in the undergraduate community. The next big step now is to push this support system to those higher up the academic scale, from postgraduates all the way up to professors, and to start talking more openly about it within the workplace.

As a current PhD student, this is something that is important and personal to me. I raise my hand to say that I fall within that 32% of PhDs with a mental health problem, and have both anxiety and depression.

Before my PhD, I encountered a few students who opened up about the struggles of doing a PhD. Although, quite like breaking a leg, it didn't occur to me how they actually felt until I was going through it myself. I had mentally prepared myself for the workload and the challenges of teaching, but the one thing I never thought to prepare for was the loneliness. Because, the truth is, doing a PhD can be a lonely process. You're striving to produce novel research and to answer a question that no one has asked before and, in the

process, you're essentially becoming an expert in that one thing you are trying to answer. This also means that you know more than your supervisors at times, and that's a scary thought. This void of being not quite a student and not quite an academic can lead to imposter syndrome; the feeling of being a fraud and doubting ones abilities.

Work worries however, were just one side of a coin. Other personal worries started to pile on; worries about money, personal issues, and relationships to name a few. I debated whether I should seek counselling but my thoughts always ended with 'man up and deal with it'. The pile of worries became so high that my anxiety had manifested to the point where I couldn't handle it any longer.

Going to a counsellor was a crucial step towards talking openly to my supervisors about my worries and also liaising with a doctor about the problems I was facing. My doctor referred me to Talking Therapies to start Cognitive Behavioural Therapy (CBT), which helps you manage problems by tackling negative feelings and behaviours. The counselling and CBT steadied me for a while, until the second year blues hit; hard and fast. In terms of my work, my research felt like it was on a permanent standstill. I was completely unmotivated and was always questioning 'What was the point of my PhD?' and 'Why was I doing it?' I was lost in a negative spiral.

My visit to the GP confirmed that I had depression. The news hit me

hard – knowing that I had issues with anxiety was one thing but finding out I was depressed was a whole other level. I was in denial and adamant about not taking medication. It felt that taking medication was the final sign that something was truly wrong with me. The negative stigma was still stuck with me. However, openly talking about it with my friends, family, counsellor and GP made me realise that it was ok, and that sometimes you just need some extra help.

Depression can occur at any point in a person's life. Everyone is fighting their own battles, but the trick is to find a way to process and deal with these obstacles in a healthy way. Counselling and Talking Therapies was a big step forward in dealing with my issues outside academia, but the BES mentoring scheme and SPRINT (a career development programme for women in research) helped me deal with my complex academic worries that I felt that my counsellor sometimes didn't quite understand. Both programmes allowed me to have alternative advice and perspectives from researchers outside of my supervisory team. The SPRINT programme also allowed me to meet like-minded people going through the same struggles and worries, adding more cogs to my support network.

I'm lucky to have two understanding supervisors who are supporting me in navigating my way through these problems so that the quality of my research is not affected. PhD and academia is a lot to do with

passion for your subject, but equally as important is perseverance and resilience. Right now I'm on the up, and there'll be plenty more dips and peaks to come. However, I feel a lot more resilient now that I am more emotionally aware of myself.

Providing more staff and faculty training as well as more services dedicated to mental-health can help create a safe space to start those (maybe at first awkward) conversations, and start breaking the stigmas and prejudice surrounding mental health. Because, in order to create a well-rounded functioning ecosystem of research, we firstly need to take care of each of the individuals within it.

### OTHER RESOURCES:

Mind: <https://www.mind.org.uk>  
Time to Change: <https://www.time-to-change.org.uk>

### REFERENCES

Levecque, K., Anseel, F., De Beuckelaer, A., Van der Heyden, J. and Gisle, L. (2017) 'Work organization and mental health problems in PhD students', *Research Policy*. North-Holland, 46(4), pp. 868–879. doi: 10.1016/J.RESPOL.2017.02.008.  
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The BES Accessibility Network is open to everyone who feels they would find it useful and aims to support anyone who is managing any disability, physical or mental health issue, that impacts on their professional life. Please do contact Karen Devine [Karen@britishecologicalsociety.org](mailto:Karen@britishecologicalsociety.org) if you would like more details.

We are immensely grateful to Lesley and Chanida for sharing their perspectives. We are always seeking *Bulletin* pieces that inform and share experiences and authors are welcome to write anonymously. If you would like to write for us, please do get in touch.

## I THINK I NEED HELP, WHAT CAN I DO?

### TALK TO YOUR SUPERVISOR/LINE MANAGER

This can be daunting, but you might be surprised with what your supervisor has to say, and what worries can be alleviated by talking to them openly and honestly.

### PRACTISE MINDFULNESS

Mindfulness can help you stay more in the present and be more aware of your thoughts and feelings.

### CONSIDER COUNSELLING

Counsellors listen unjudgementally to your problems and prompt you to think in a way that can help fix or alleviate them. They can also help liaise with your GP and supervisors if needed, and is normally free for students at universities.

### TALK TO A FAMILY MEMBER OR TRUSTED FRIEND

Talking things out and even diary writing can help by letting your emotions out, and stopping yourself from getting caught up in your thoughts. However, if your worries and thoughts are still affecting you, it maybe good to consider the other methods to help cope in the long term.

### VISIT YOUR GP

The GP may refer you to undergo treatments such as Cognitive Behavioural Therapy (CBT) or offer a course of medication.

### PHONE A HELPLINE

The Good Samaritans helpline is free and available anytime if you need someone to talk to.  
Call: 116 123

### CONSIDER COGNITIVE BEHAVIOURAL THERAPY (CBT)

Your thoughts, physical sensations, feelings and behaviour are all linked. CBT works by trying to improve how you cope with one part of this network, which will help alleviate the rest. They can be held as one-to-one sessions, group session or through using self guidance tools such as Silvercloud. This service can be self prescribed (although the waiting list can be long) or referral through your GP.

## WIDENING PARTICIPATION

# WOMEN IN ENVIRONMENTAL SCIENCE



Cecilia Medupin | University of Manchester, UK | [cecilia.medupin@manchester.ac.uk](mailto:cecilia.medupin@manchester.ac.uk)

In June the first **Women in Environmental Science** workshop was held, organised by myself and sponsored by the University of Manchester's Directorate of Social Responsibility. The workshop was significant as well as timely for many reasons following recent events such as International Women's Day (8 March), World Environment Day (5 June), and World Ocean Day (8 June).

The aim of the workshop was to bring women of different ethnicities and diverse disciplines into one place to promote inclusiveness, widen participation and share ideas. The wider agenda of the workshop fits into the University's environmental sustainability development goal for inclusiveness. There were seventy participants including students, academics, non-academics and professionals from different organisations.

My introductory speech outlined the major topics of the meeting and highlighted that that women make up 12.8% of all people working in STEM fields. This is a small percentage considering that 40% of female undergraduates study science courses. These figures reflect the fact that women are still underrepresented in this field.

### Talks and knowledge exchange sessions

The presenters at the event came from within and outside academia and covered broad topics including leadership, passion, challenges, prospects, empowerment opportunities; and specific topics such as the mixed-energy economy and the



interdisciplinary role of environmental science in providing a nexus between scientific research, policy and the delivery of impact.

Following the presentations we held knowledge exchange and break-out sessions. Delegates were invited to sign up for a choice of sub-themes and had a chance to ask questions. Topics included environmental changes, society, culture, health, water resources, integral environmental roles, and female environmental leaders and followers.

### Key findings:

- Many organisations need to encourage career break discussions – making them a norm rather than an exception
- Women should focus on what is really important for themselves

especially in defining their work-life balance and pace

- Women and children are more affected by changes in the environment and the only way to approach the problem is to raise awareness in schools and communities
- Water quality/quantity represents an important determinant in environmental health
- Everyone has a role to play for any positive change
- In relation to children's education, it is important to discourage gender discrimination
- Women are more likely to show empathy in their jobs
- It is important to encourage support and empowerment amongst women.



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## CAREERS

# VOLUNTOURISM ITS ETHICS AND EFFICACY

Choon Fuller | choonfuller@gmail.com

As an undergraduate, one piece of advice frequently given is that you should gain experience in the area you want to work in when you graduate. There has been an increase in the number of people gaining undergraduate degrees that far exceeds the increase of jobs available. Simply possessing a bachelor's degree is no longer enough to make you stand out from other job applicants - it is a basic requirement.

When trying to obtain experience, specifically in working with animals, sometimes the easiest way is to go abroad and engage in voluntourism. Often little to no experience is required for this volunteering - a passion for flora and fauna is all you need. Conservation voluntourism often involves paying a substantial fee to work on the conservation of some of the globe's most charismatic megafauna. The cost normally covers accommodation, food and training. But how much of your money is actually used for your volunteer experience, and where does the rest go?

Organisations such as ProjectsAbroad are seemingly transparent with where their costs go, allocating 51% of money to direct and indirect costs of the volunteer experience which includes supplies and resources for locals. The other 49% will go back into the company. Many other organisations will not disclose where your money goes. Frontier.ac.uk does not have a section of the website to explain a breakdown of costs, and normally does not even provide the name of the organisation to allow for further research. Goeco.org provides a spiel under 'FAQ's' explaining that

the money goes to the volunteer experience, training, insurance etc. without going into specifics or acknowledging that money is put back into the organisation.

The ethics of voluntourism in developing countries has been called into question. Some argue that voluntourism reinforces the notion that developing countries require the help of affluent westerners to develop (McGloin and Georgeou, 2015). The efficacy has also been challenged. How helpful are these volunteering opportunities on the communities or animals you are working for? Volunteering in an animal sanctuary provides high levels of care to a select number of captive individuals in need. Similarly on nature reserves volunteers do a great job of looking after and monitoring animals such as elephants and rhinos which is helpful for that specific nature reserve. Unfortunately, simply looking after animals in



captivity does not solve the main issue. Even if the orangutans in an animal sanctuary are well looked after, with the loss and degradation of habitat being the primary threat for 85% of species on the IUCN Red List the root of the problem is not being addressed.

Breeding or rehabilitation programmes that move from ex-situ to in-situ conservation help the ecosystem instead of a captive population. Nature reserves also benefit the ecosystem as the population of animals being looked after are still wild and may not be isolated. Of course looking after a captive population still has merit, but it is a small scale solution to a big scale problem. Research assistants will help with ongoing research which is important for furthering scientific knowledge that may help to improve conservation efforts, or provide insight.

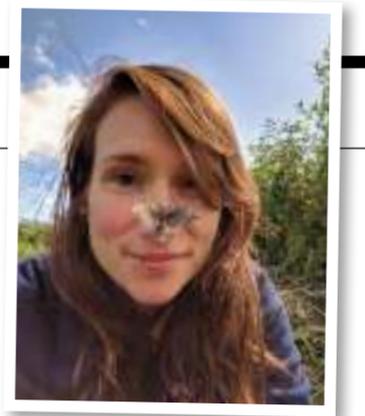
There are many options for voluntourism available, at a range of prices. The impact that you are having and the legitimacy of the company should be taken into consideration when choosing where you want to volunteer. It falls on the volunteer to do their research to ensure they are having the desired impact and that the company is doing what they set out to do. Most animal voluntourism options are not inherently bad, but they may not be very good either.

## REFERENCES

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## CAREERS

# Q&A WITH LOWRI WATKINS CONSERVATION PROJECT OFFICER FOR GWENT WILDLIFE TRUST



### What has your career pathway been to date?

After graduating with a master's, I started out as a Digitisation Officer at Royal Botanic Gardens, Kew in 2011, imaging and transcribing information from thousands of Kew's dried herbarium specimens. I was later promoted to Quality Assurance Officer and Team Leader and spent four happy years with Kew. I decided to leave at the end of a contract, taking some time out to volunteer, build my field skills and hopefully kick-start a career in practical nature conservation.

After realising I was still a way off gaining employment in this field, I focussed on applying for trainee placements, which I hoped would provide much-needed skills and experience and a stepping stone to paid work. In 2016, I was accepted onto a fantastic nine-month ecological survey traineeship with Gwent Wildlife Trust (GWT) and gained a wide range of survey skills through this, allowing me to apply for the position of Assistant Conservation Project Officer at the end of my training. I've since been promoted to Conservation Project Officer and work across a range of projects, with a focus on ecology and particularly water voles.

### What do you love most about your job?

I love the practical aspects of my job - being able to work outdoors, conducting surveys in a range of habitats and species, from otters to meadow plants. I also really enjoy working and engaging with a wide range of people, from volunteers, to landowners, schoolchildren and

members of the public. I have never been so immersed in nature before and have really felt the positive impacts to my health and well-being!

### Who have been your role models or mentors?

In my time at Kew and GWT, I have had three brilliant line-managers who have provided support and encouragement, pushing me to gain new skills and to apply for roles which I doubted I could do. I continue to learn from really knowledgeable ecologists, who have let me participate in surveys and patiently listened to my many questions and attempts at species identification! I also feel especially fortunate to have worked with some really talented women, in positions of leadership or expertise in their field, who continually inspire me to grow in my own career.

### What are the main challenges you face in your area of work?

Working in the charity and conservation sector, we're facing unprecedented declines in biodiversity, unrelenting and growing pressure from build development, while funding and support continue to shrink. On a smaller scale, my main challenges centre around how best to conserve and encourage the spread of water voles in my area, how to approach and advise landowners and how to engage the public to enjoy and protect the wildlife and green spaces that surround them.

### What kind of professional development and support has been provided by your employers?

Through my traineeship I was able to attend a wide range of species identification and survey training, QGIS training and a fantastic FSC grasses, sedges and rushes ID course. Now that I'm employed, I have a set training budget and have been encouraged to seek out relevant training opportunities. I have attended a MapInfo (GIS) course, lots of internal species ID courses and I am working towards gaining my hazel dormouse handling license. I also shadow other members of staff, to further develop my field ID and survey skills.

### What does the future have in store for your area of work?

With Britain's water voles still in decline, my work will continue to focus on reversing this trend on a local scale. Improving our monitoring of species and habitats is also crucial, allowing organisations, government, landowners, funders and others, to make informed decisions about conservation priorities, now and in the future.

### What's your one top tip for those who would like to follow a similar career?

Seek out placements and training opportunities, absorb as much information as you can and don't be afraid to ask for advice from people working in your chosen field/role. If I could go back in time, I would join my local mammal and botany groups earlier and begin practicing identification and survey skills in my free time. Don't be disheartened if you don't get that first job, keep trying and it will happen!

# FROM OUR SOUTHERN CORRESPONDENT THE FINAL CHAPTER



Richard Hobbs | University of Western Australia, Australia

## “I GET SO TIRED OF THE RAT RACE CHASIN’ MY TAIL LIKE A HOUND I’LL SING ONE LAST SONG FOR OLD TIMES’ SAKE BEFORE I TAKE MY FINAL BOW”

Lindi Ortega (2017)

I mentioned last time that it’s almost exactly 20 years since former Bulletin Editor, Peter Thomas, twisted my arm to write periodic pieces for the Bulletin from a southern perspective. I have to confess that I didn’t expect to still be writing southern correspondent pieces 20 years later. And I’ve reached the conclusion that 20 years is long enough for any one person to rabbit on about stuff. So, this will be my swan song as Southern Correspondent.

As often happens, I got distracted by wondering where the saying “swan song” came from. According to Wikipedia, “(It) is a metaphorical phrase for a final gesture, effort, or performance given just before death or retirement. The phrase refers to an ancient belief that swans (*Cygnus* spp.) sing a beautiful song just before their death, having been silent (or alternatively, not so musical) during most of their lifetime.” As with many things in ecology, there is debate about this. It turns out that there have been arguments about the saying for a while, with people pointing out that most swans aren’t silent and few have been heard singing beautiful songs while they kark it. Still, why let evidence get in the way of a nice idea?

Thinking further about swans took me back to my childhood hobby of stamp collecting and of discovering that a relatively rare and desirable set of stamps featuring swans originated in Western Australia in the mid 1800s. Growing up in Scotland, I knew little or nothing about Western Australia and was also more than a little puzzled that the swans on the stamps were black. At the time I thought this must be an artefact of some primitive printing process, but later discovered that Australian swans are, indeed, black. I’m now completely used to seeing, more or less on a daily basis,

black swans swanning about on the river in Perth (aptly named the Swan River). They make nice swanny noises, but I’ve never heard one sing a beautiful song.

For people living in the northern hemisphere, the initial discovery of black swans came as something of a shock. All swans were white, as far as everyone was concerned, until 1636 when Antonie Caen, a sailor on board the Dutch sailing ship the *Banda*, first sighted black swans near Bernier Island off the south-western coast of Australia.



Western Australia 1 penny stamp, 1854

The author Nassim Nicholas Taleb used black swans as a metaphor for the human propensity to fool ourselves into thinking we know more than we actually do (Taleb, 2007). He suggested that, “It illustrates a severe limitation to our learnings from observations or experience and the fragility of our knowledge. One single observation can invalidate a general statement derived from millennia of confirmatory sightings of millions of white swans. All you need is one single (and I’m told quite ugly) black bird”.

I, personally, think black swans are actually rather handsome birds, but visitors from the northern hemisphere still get a huge kick out of seeing something that is, to them, quite weird. Living in Australia, and particularly the southwest, you grow accustomed to being confronted with biota that don’t conform to the norms by which the rest of the world lives. One never, however, loses the propensity to be surprized and amazed by the flora and fauna here – or to consider the questions these organisms pose to how we understand the natural world.

Taleb describes the Black Swan phenomenon as representing events that are outliers, outside the realm of regular expectations because no past experience can hint at its possibility, that have an extreme impact (think 9/11, the 1987 stock market crash, Brexit, Scotland beating England in a one day cricket match). And despite their inherent unpredictability, humans try to explain their occurrence post hoc in an attempt to make them explainable and predictable. He suggests that events with this combination of rarity, extreme impact and retrospective (though not prospective) predictability are actually incredibly important in shaping our world – much more so than most of the ordinary things we spend our time trying to understand.

The Black Swan idea resonates for me with what we’re currently grappling with in trying to understand our local and global ecologies in the face of unprecedented environmental and social changes. Ecologists spend their time trying to develop predictive capability, but often end up with the conclusion that the organism or ecosystem in question pretty much does as it damned well pleases,



Red-tailed Black Cockatoo eating fruits of the non-native Cape Lilac in Perth, Western Australia © Christine Chester

whether we understand why or not. Here in Perth, we’re trying to understand why another locally iconic black bird, the Red-tailed Black Cockatoo, has moved from the forest into the city and is now feasting on the seeds produced by a non-native garden tree, the Cape Lilac. We’ve pretty much documented when the move started (Johnstone *et al.*, 2017) and are looking at the relative nutritional value of the new food source, foraging efficiencies and the like. And we may be able to come up with some pretty convincing ideas as to why the birds might have moved (although cockatoos are renowned as particularly tricky and idiosyncratic organisms). However, 20 years ago, it wouldn’t have even crossed anyone’s mind that the red-tails would become urbanites. Maybe Taleb should rename his book “The Black Cockatoo”.

This is just one example of many in which we’re having to recalibrate our ideas about how species and ecosystems respond to changing conditions. This is challenging, especially in the midst of reduced funding for research and fluctuating political and social interest and engagement. Indeed, we seem to be in an era where dystopian fiction no longer provides a crystal ball into the future but more of a mirror reflecting the current situation. However, it’s also an incredibly exciting time to be an ecologist. And luckily, there are plenty of switched-on enthusiastic young ecologists willing and ready to take part in the quest to better understand, manage and conserve the world’s species and ecosystems.

So, as I say farewell in my last Southern Correspondent article, I do so with a mixture of hope for the future and envy for the people who will continue the ecology enterprise. I’ll also miss the regular opportunity to rib my British colleagues regarding the lack of prowess in whatever sport happens to be being played at the time. Back to the swan song. While I hope I’m not going to drop off the perch any time soon, I did find the derivation in Wikipedia oddly relevant. Having been “not so musical” during most of my lifetime, I picked up a guitar a few years ago, rekindling a desire to play that had lain dormant since my youth. Whether or not I can turn this ambition into “singing a beautiful song” remains to be seen: however, instead of squawking from afar in the pages of the BES Bulletin, I’ll now be putting more time into being a little more musical in the land downunder. Many thanks to Peter Thomas and Alan Crowden for putting up with me, to those who have communicated with me about my articles over the years, and to the few lost souls who have regularly read them. So long, thanks for all the fish, and watch out for low-flying black swans.

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## LETTERS



### 30 YEARS OF FIELDTRIPS

From Elizabeth Evesham, Bournemouth, UK

I am responding to Steve Tilling's article 'The Fieldwork Deficit' (June 2018, p16) in which he states that fieldwork has disappeared from the Biology A-level course because there is very little time allocated to it. He also states that perhaps the ecological work should be allocated to the Geography course. Surely, those students not studying Geography would still be deprived of the valuable ecological element of the Biology course.

I just wanted to reassure Steve Tilling that I for one continue with annual fieldtrips and have taken students on one in all the 30 or so years of my teaching career. In my previous post, my colleagues and I had our specialist areas of ecology and the students did projects, each day, on ant ecology and behaviour, rock pools, rivers and plant succession. With ecology and the impact of farmland management featuring a large part of the current curriculum, along with statistical analyses and the need for all students to pass the practical element of the course, I am in my element as an academic and continuing my own research interests.

In my current post, I am the only Biologist teaching A-level and Foundation courses and take my students (all international) to a local field studies centre that I have often used in the past and know the tutors well. Together, we tailor the two full residential days to meet the needs of the course. I have found that this in fact saves time later on the year since such a lot of the course is covered in a short space of time. I have encouraged my colleagues, in our other schools around the country, to do the same with their students and have been showing them how much they can achieve by just going out into their school grounds. For my international students, who have had very little previous practical experience, this has been a wonderful opportunity to see living things and how they interact with the environment. They also see birds being ringed and have a chance of catching, seeing and releasing small mammals, crabs, sea anemones and starfish.

I hope this will encourage other teachers to take part in or to continue with "the fieldtrip."

### SHOULD WE REALLY ENCOURAGE UNDERGRADS TO ATTEND CONFERENCES?

From Callum Macgregor, York, UK

I read with interest the feature about undergraduates attending conferences (June 2018, p46). I think it's fantastic that an undergrad was able to attend the BES Annual Meeting and was able to get so much out of the experience – I also think it reflects well on the community of ecologists that they were able to feel confident and included in that environment. Nevertheless, as I read, I began to feel a growing unease.

As an open and progressive learned society, should we be directly exhorting undergraduates to attend conferences? As scientists and as members of academia, we spend a lot of time worrying about how to even out the headstarts in life that some people are given, and others not. Conferences are very expensive to attend, with registration, accommodation, travel and food to consider. By openly encouraging undergraduates to take the step of attending a conference in order to network, meet potential future supervisors, and hear about opportunities for jobs and PhDs, are we not increasing the opportunities available to those who can afford them, to the detriment of those who cannot?

Is there another way? Perhaps. Off the top of my head, could the BES introduce an initiative to give a certain number of places at the Annual Meeting each year to undergraduates, with all (reasonable) expenses, including travel and accommodation, paid? Perhaps the lucky students could be selected through an essay competition or something similar, in order to allow the most deserving students to attend, rather than just the most privileged. Such a competition would have the additional benefit of advertising the BES Annual Meeting directly to undergrads.

#### Editor's response:

We have our Annual Meeting Helper scheme which undergrads can apply for. Helpers work with us behind the scenes at the event and in return get their registration fee reimbursed. There are 40 Helper spaces at each meeting and last year nearly half of them went to undergrads. Our Events Manager, Amy Everard, makes sure that all Helpers attend any sessions they want.

Other specific initiatives we have for undergrads include our Undergraduate Summer School – free to attend with travel costs covered if needed. Our Undergraduate Careers Conference runs

every year – students can apply to be Helpers at that in return for travel costs being covered. Amy Padfield, our Education Manager, can always be contacted for careers advice and is happy to look over CVs etc. Undergraduates are also eligible for our Small Research Grants of up to £5000.

But there is always room to do better. Our Equality and Diversity Working Group and in-house staff work hard to make sure we remove as many barriers as possible, to specific events but also to ecology in general. So watch this space, there will be more happening to make our

Annual Meeting reach more people, including undergrads.

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Include a reference to the article (issue, title) you are responding to.

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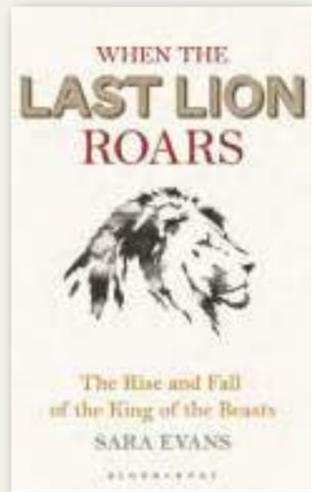


## BOOK REVIEWS

### GET INVOLVED

We would like to expand the scope of books reviewed in The Bulletin. If you have read an interesting book, from any genre, that touches on ecological research or concepts, then write us a review! Email Kate (kate@britishecologicalsociety.org) for details.

Publishers can send review copies to: The Bulletin Editor, British Ecological Society, Charles Darwin House, 12 Roger Street, London, WC1N 2JU



### When the Last Lion Roars: The Rise and Fall of the King of the Beasts

Sarah Evans  
Bloomsbury (2018)  
£16.99 (hardback)

The natural history section of any bookstore tends to be overrun with personal memoirs of authors reminiscing with rose-tinted glasses about their privileged lives growing up with wildlife. And whilst

I do occasionally guiltily love to indulge in narrative books about animals, it's sometimes nice to read a good old science book that sticks to the facts. 'When the last lion roars' is just that.

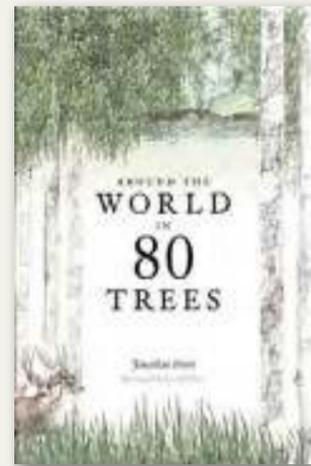
Sara Evans does a masterful job of guiding the reader through the fascinating history of the lion, right from its early predecessor, the prehistoric cave lion, all the way through to the present day. She meticulously documents *Panthera leo's* stark and precipitous decline through the last few centuries and explains both the causes for and solutions to this loss.

Written in an engaging and accessible manner and including cutting edge research on the species, Evans discusses the difficulties with monitoring their population and the range and uncertainty of population figures out there. Peppered with personal accounts of observing lions both in the wild and captivity, the author brings to life this species in beautiful, page-turning prose. She describes in detail the diverse, and sometimes surprising, ways in which we have integrated *Panthera leo* into our arts and culture throughout the millennia.

A number of chapters focus on the history of humanity's propensity for killing the king of beasts over the last few centuries, including – of course – a brief mention of Cecil the lion. Interviewing the world's experts on the species and drawing from the scientific literature, she paints a balanced and rational view on the pros and cons of hunting lions.

It is scary to think that, within my lifetime, the global lion population has halved. But the book concludes with a positive story of hope on how we can help secure this species' future and the amazing people that are dedicating their lives to ensuring that lions will be around for many generations to come.

Niki Rust



### Around the World in 80 Trees

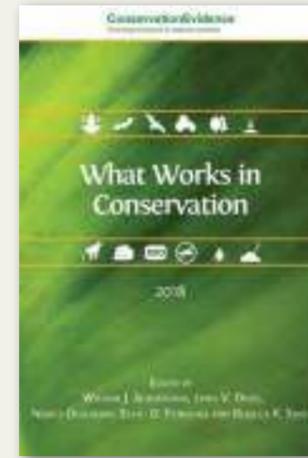
Jonathan Drori  
Laurence King Publishing (2018)  
£17.99 (hardback)

When Jon Drori first told me that he was going to write a book about trees, I thought that he had set himself a Herculean challenge to come up with something novel, given the plethora of material that already exists. *Around the World in 80 Trees* is evidence of Jon's talent and ingenuity and my underappreciation of his vision and creativity: the book is a masterpiece. And it's not only a book about trees, it's a book about how trees have shaped our world, which is beautifully illustrated and succinctly

crafted. It skilfully interweaves botanical information with the role that trees have played in just about everything, from medicine to mythology, from food to fashion to furniture, and from art to artillery. It can equally be read as a travel guide, where trees play a defining part in characterising the landscape, from the ornamental cherry in Japan, to the Indian banyan, and the baobabs of the African savanna, or as a history text that charts the role of trees alongside human evolution. If you're interested in knowing which British staple originated in the mountains of Kazakhstan, which tree enabled our ancestors to cross the Pacific, and what was likened to "eating sweet raspberry blancmange in the lavatory", you need look no further (answers below).

Malcom Press

Apples, Balsa, Durian  
(quoting Anthony Burgess)



### What Works in Conservation

Edited by William J. Sutherland, Lynn V. Dicks, Nancy Ockendon, Silviu O. Petrovan and Rebecca K. Smith

Open Books (2018)

Open Access

*What Works in Conservation* contains an analysis of 1,277 conservation interventions, along with summaries of the evidence surrounding them. An expert panel has assessed the effectiveness of each intervention, and they are clearly categorised to make the book easy to use. The result is a practical manual for conservation, which can be used alongside the full information provided at [www.conservationevidence.com](http://www.conservationevidence.com).

It covers a broad range of topics, including global conservation of amphibians, bats and birds, and conservation on European farmland. It also extends into the territory of ecosystem services, looking at interventions to enhance biocontrol and soil fertility, for example. The 2018 edition has been updated to include new topics

such as the conservation of peatlands, shrublands and heathlands, and the management of captive animals.

In each of these areas, the analysis reveals the management techniques which are most likely to be effective and, perhaps even more importantly, those which can be ineffective or even harmful. It is sobering to read that a variety of conservation interventions are likely to be simply an ineffective waste of money, and some can even have negative effects. Studies of translocating bats to predator-free areas, for example, found evidence of homing tendencies, disease and death.

In many cases the summaries reveal how little we know, with interventions often being listed as having limited or no evidence. Even those which have been assessed often have just a few studies in different contexts, meaning that users of the book may find the evidence doesn't cover the habitats they work in. The authors are therefore keen to stress that there may be side-effects that haven't been identified by current research, and that anyone considering one of the interventions should read the detailed accounts of the evidence found on the Conservation Evidence website.

*What Works in Conservation* is published by Open Book Publishers, a Social Enterprise with the ambition of making research available to readers around the world. This means that a PDF version is available to download for free from the Open Books website, and the print version is available to purchase.

The book and accompanying evidence are an incredible achievement, providing vital assessments which would otherwise be impossible for many of the people making decisions in the field. It fills a vital gap between evidence and practice, and will prove invaluable for anyone whose mission is to protect wildlife.

Rebecca Nesbit



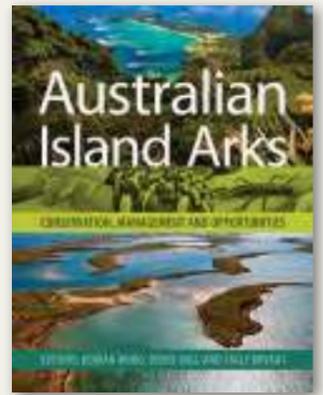
### Recovering Australian Threatened Species: A Book of Hope

Edited by Stephen Garnett, Peter Latch, David Lindenmayer & John Woinarski

CSIRO Publishing (2018)

AU \$55.95

So often a review of conservation progress is a depressing read with the authors happy that nothing has yet gone extinct or giving a review of the seemingly insurmountable challenges still to be faced. Which makes the first of these books – *A Book of Hope* – a welcome read that gives details of "some outstanding and inspiring successes". It gives some 29 or so case studies from around Australia, its islands and surrounding oceans where extinctions have been avoided and populations increased. This includes whales, rare communities, birds, reptiles, small amphibians and diminutive orchids, and such things as the successes of breeding threatened fauna in zoos. Each case study starts with an excellent summary of the problem, the actions taken to manage the problem, the markers of success and the reasons for success. For example, the small spiny daisy *Acanthocladium dockeri*, doesn't look like



### Australian Island Arks: Conservation, Management and Opportunities

Edited by Dorian Moro, Derek Ball & Sally Bryant

CSIRO Publishing (2018)

AU \$79.95

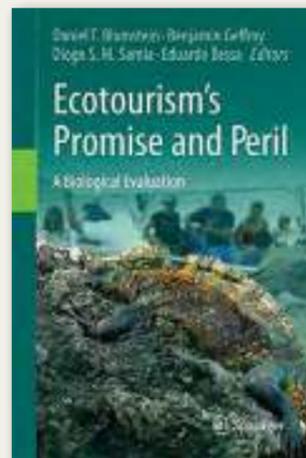
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much and is restricted to just six degraded roadside populations. But the interest of the local community was piqued since it was first collected in 1860 as part of the Burke and Wills expedition that crossed Australia south to north, in which only one of the eight participants returned alive. The community championed the plant's survival and helped practically by controlling weed competition and transplanting it to new sites. A heart-warming success story. And the book is full of them. But this is not just a touchy-feely book, each case study gives hard numbers, talks about where the money is coming from, the underlying biology of the organisms (and the holes in knowledge), and how the monitoring is carried out. Even if you never travel to Australia, the case studies of success are salutary lessons that progress can be made against seemingly intractable problems. A great resource for final-year undergraduate teaching.

The second book deals more with habitat than species, specifically those found on the incredible range of islands around Australia's coast from the sub-Antarctic to the tropical Cocos (Keeling) Islands. These islands contain over 35% of Australia's threatened species and others that are declining on the mainland. The message of this book is also upbeat, that restoring and managing these islands is worthwhile and, most importantly, achievable. Rather than taking a species level approach, this book looks at how current management practices can be copied and improved as seen through the eyes of practitioners, researchers and policy-makers. This management involves controlling invasive species

and aiding the recovery of threatened species, while at the same time being sensitive to cultural values and partnerships, tourism (especially along the Great barrier Reef) and the controlling legislation. If you're looking for case studies on how to put together conservation packages in practice, you'll find this book useful.

Peter Thomas



### Ecotourism's promise and peril

Edited by Daniel T Blumstein, Benjamin Geffroy, Diogo S.M. Samia & Eduardo Bessa  
Springer (2017)  
£29.99 (hardback)

Ecotourism has been variously defined over the past few decades as its importance has increased in monetary terms. One of the most common definitions is "Responsible travel to natural areas that conserves the environment and improves the wellbeing of local people". Most often conflated with nature tourism, a rather older and more general term, it has grown rapidly, both nationally in many developed countries and internationally as cheap air flights have boomed.

If the numbers suggested in this volume are realistic – 60 million international ecotourists in 2015 rising to 2 billion by 2100 – we have a major problem already well advanced. As ecologists, we need to be concerned as more and more of the remaining natural sites throughout the world are increasingly impacted by tourists. There are already many volumes in print that deal with managing numbers and impacts in this field so what is special about this volume? Here they have tried to make it animal-centred, ranging from large terrestrial mammals to marine mammals, and from birds to fish. In addition they have tried to examine the interaction of ecotourism with human communities – is it really a panacea for the developing world?

The chapters do a good job at drawing the wide ranging research together which documents the substantial drawbacks that this sort of tourism can initiate – from behavioural problems to breeding failure, from changes in food webs to changes in diet, never mind increased road kill, possible disease introductions and the potential ills of animal habituation. All of the chapters are written by academics so there is no industry perspective.

There is a list of 24 Recommendations for Good Practice and, of course, if all ecotourism followed these principles with well-trained guides and adequate monitoring of impacts there would be much less to worry about. As it is, there are unscrupulous operators, inadequate regulators and poorly trained rangers and guides most of whom will

never understand enough about the animals to implement good practice. If this sounds jaundiced then perhaps it is because I have seen poorly managed whale watching, ignorant behaviour of tourists and penguins, poorly designed safari lodges and overcrowded parks etc. The authors maintain that well organised and managed ecotourism enhances conservation, empowers communities and improves environmental awareness and I am sure it can. In addition, its impacts are suggested to be less damaging than mining, flooding, logging, seizure of lands and dispossession etc., which is also undoubtedly true. However, moving from where we are now to a more sustainable system with higher numbers seems to me unlikely to be achievable. This book provides a wealth of valuable evidence for regulators, managers and ecotourism companies to use in training and planning if only they will read it. It also provides ecologist with a good overview of the evidence of our interactions with charismatic animals.

David Walton



### Conservation and Development in India: Reimagining Wilderness

Edited by Shonil Bhagwat  
Routledge Earthscan (2018)  
£76 (hardback)

History shows that worldwide conservation and development are more often characterised by conflict rather than by symbiosis. This is apparent in modern India where isolated wildlife parks have been established but which may now be in competition/conflict with developing rural communities. Such is the theme of this book which comprises 10 chapters with 15 contributors. The introduction highlights the agricultural, ecological and technological impacts that have occurred in the last 200 years, a time of major population increase and climate change, to generate India's current landscapes and environmental conflicts. The idea of the Anthropocene is embraced despite a lack of formal definition geologically but because the human influence has been so profound. There are also apparent contradictions in a country where mega fauna remain ecologically significant and a source of conflict; on the one hand national parks are a source of income yet they may

inhibit local development. Boundaries are often contentious, contested and breached. There is a chapter on recent environmental history which reviews past events which have shaped the landscape e.g. The Indian Forest Act of 1878 which established protected and reserved areas. This led to development and conflict especially re economic activity such as mining. The development of renewable energy is a further source of conflict re biodiversity conservation as illustrated with reference to Karnataka, Maharashtra and Himachal Pradesh where local movements have made noted impacts. A different perspective comprises an examination of species and site conservation as opposed to large scale park establishment; cases of conflict and compensation are examined. There are chapters on elephant populations and their management, biodiversity in landscapes managed by communities, and the Biligiri Rangaswamy Temple Tiger Reserve in Karnataka which was declared a wildlife sanctuary in 1947. Here there are many designated sacred sites which bring an added dimension to management. Further topics include the role of international conservation initiatives e.g. Ramsar sites, Biosphere Reserves, World Heritage sites, as well as national initiatives. There is also an interesting perspective on the role of market incentives for conservation on private lands e.g. coffee growing beneath the forest canopy in Kodagu. Clearly, there are no simple or single answers to conservation in the diverse nation that is India. This book is thought provoking and its principal topics are just as relevant to other parts of the world.

Antoinette Mannion



### Holistic Management: A Common Sense Revolution to Restore our Environment (Third Edition)

Allan Savory with Jody Butterfield  
Island Press (2016)  
US \$35.00

From the title one might think this book about general principles of environmental management. Most of the focus is upon dry grasslands of the tropics and subtropics. Confusingly the frame of reference shifts frequently, and without much explanation, to include humid grasslands, forests, urban areas, even a few paragraphs here and there about freshwaters; although nothing I saw about the marine. Often the environmental managers referred to are farmers, especially on rangelands, but the book is not explicitly aimed at farmers.

The main thesis of the book is that a "holistic" approach is required that marries an understanding of ecological processes with management practices that result in a financially viable enterprise. In particular there is an emphasis on using grazing animals to maintain or restore biodiversity in

what Savory calls "brittle" environments; that is grasslands in which low rainfall has a dominant effect upon system ecology. He valuably draws attention to the very different approach needed for management of these areas compared to more resilient grasslands in humid parts of the world. He particularly emphasises the benefits to biodiversity, yield and soils of short periods of intensive grazing followed by time for vegetation recovery, but cites little experimental research to support his views.

There are statements I agree with in this book (e.g. stability increases with increasing complexity), ones I might agree with if any evidence were given, others I definitely disagree with, and some I see as dangerous over simplifications. For example Savory posits that in humid environments all types of vegetation can be degraded down to bare soil and will restore their full structure and complexity simply by being rested. Some of what is written made me splutter into my coffee e.g. "I have been unable to find any clear evidence for competition in nature" (p127).

Despite frequent use of "holistic" in this book it fails to mention the way in which improved understanding of ecosystem services should influence future environmental policy and practice.

I deeply mistrust all references to common sense, as so much science disproves common sense conclusions. I would instead like to see more evidence to support the advice given.

John Hopkins

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# ACCOUNTS

Accounts for the year ended 31 December 2017 together with the reports of the Board of Trustees and auditors

Company number: 1522897  
Charity number: 281213

BRITISH  
ECOLOGICAL  
SOCIETY

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# BOARD OF TRUSTEES' REPORT

For the year ended 31 December 2017

The Trustees present their report and financial statements for the year ended 31 December 2017.

## 1. OBJECTIVES AND STRATEGY

The objects for which the British Ecological Society (BES) is established are to advance the education of the public in the subject of ecology as a branch of natural sciences and to advance and support research in that field, and to disseminate the results of such useful research.

The vision of the BES is:

**A world inspired, informed and influenced by ecology**

Our mission is to:

**Generate, communicate and promote ecological knowledge and solutions**

In order to achieve this our major goals are to:

- Generate, synthesise and exchange ecological knowledge
- Communicate world-leading ecological science
- Share the excitement and relevance of ecology
- Inspire, engage and recognise talent
- Build a sustainable, resilient and efficient BES

Ecology is the scientific study of the distribution, abundance and dynamics of organisms, their interactions with other organisms and with their physical environment. At a time when finite natural resources are being used at increasing rates, it has never been more important for human society to understand its impact on ecological systems (which includes systems intensively managed or impacted on by humans such as arable farms, pastures and marine fisheries) and their importance in maintaining human health. The BES's many activities include the publication of a range of scientific literature, including internationally renowned journals, the organisation

and sponsorship of a wide variety of meetings, the funding of numerous grant schemes, public engagement, education work and policy work. The Society has approximately 6,400 members worldwide, and membership is open to all with an interest in ecology. There is a small membership fee, with discounts for students and those from low-income countries.

## 2. REPORT ON PRINCIPAL ACTIVITIES

The Trustees confirm that they have complied with the duty in section 17 of the Charities Act 2011 to have due regard to the Charity Commission's general guidance on public benefit. All trustees give their time voluntarily and do not receive any private benefit. Details of Trustees' expenses and remuneration are disclosed in notes 5 and 15 respectively.

The first four of the Society's strategic goals stated in section 4 provide clear public benefits, whilst the final one defines the ways in which the Society gains greater leverage from its finite resources and ensures its long-term sustainability.

The BES portfolio of grants covers all of the Society's aims. It can be divided into several broad categories; research, training & travel, outreach and support for ecologists in Africa. The BES funds grants with the aim of promoting ecology as widely as possible and hence individual awards are generally of relatively small value, although many awards are made.

### 2.1 Generate, synthesise and exchange ecological knowledge, and communicate world-leading ecological science

These major goals are primarily supported by our work in publishing, meetings and grants.

**Publishing - Expenditure = £1.9M (46% of total)**

In 2017, we entered into a new publishing agreement with our long-time publisher Wiley. The new 7-year term brings the

time of the next contract renewal in line with the Society's strategic planning cycle and thus enables a joined-up approach to developing the publishing portfolio and the Society's activities that the publishing income funds to a large part.

As in previous years, the five BES journals have grown in submissions and published content, with over 50 additional papers and almost 800 more pages published in 2017. Our partner journal, *Ecology and Evolution*, has also once again seen tremendous growth, publishing 250 more articles than in 2016.

In line with the BES' recruitment policy and as part of the Society's efforts to increase equality and diversity amongst its membership, staff and volunteers, we ran an open call for Associate Editors from June to September that attracted over 350 applications from interested researchers across the globe. All journals have expanded their editorial boards and increased geographical diversity as a result of this initiative and some of the newly recruited board members joined the journal teams for board meetings at the Annual Meeting in Ghent, Belgium.

In addition to providing publishing talks at the BES Undergraduate Summer School and contributing talks about publishing careers at general career events, we delivered publishing related workshops to our core ecological audiences, with events aimed at Early Career Researchers on how to get published, peer review and promoting published articles held at Swansea University and during the Annual Meeting. We also reached out to related audiences, delivering a *How to Promote Your Research* workshop at the Evolution conference in the USA and a workshop for practitioners on 'New Tools to find and share ecological information' held together with Conservation Evidence at the CIEEM conference. At the INTECOL conference in Beijing, China, we connected with the Chinese ecological community via the popular *How to Get Published* workshop, which we organized together with the Royal Society, and promoted our *How to Get Published* guide, which had been translated into Simplified Chinese ahead of the

conference and is freely available from the BES website.

2017 also saw a new addition to our BES Guides to Better Science series; the *Guide to Reproducible Code* was published in early December and like all our other free guides has proved immensely popular both in print and online.

Earlier in the year, we surveyed the Associate Editors on our journals with the aim of ensuring their views inform any improvements to our editorial process. The survey achieved a response rate of 39%. Overall Associate Editors were content with their workload and reported high levels of satisfaction with their role for the journals and also with the clarity of communication from editors and editorial offices. The survey, however, also flagged that we need to provide clearer guidance around certain journal policies and procedures such as handling appeals, dealing with conflicts of interest or guiding critiques of published papers through the editorial process, and we are working on informing our editorial boards about these in a more effective way.

We continue to support and explore novel publishing outputs beyond the traditional article or book chapter. More work has gone into investigating the information needs and publishing practices of practitioners in 2017 and *Methods in Ecology and Evolution* has developed a policy for publishing code, which increasingly constitutes an integral part of a researcher's work. A modified version of this policy is to be adopted by the other BES journals in 2018. This journal has also entered into a code reviewing partnership with rOpenSci, whereby authors can have their code checked to ensure that it has no obvious bugs and as future proof as possible. Substantial research has also been carried out towards launching a new interdisciplinary journal that is to explore the social dimensions of ecological topics.

Finally, the BES publications have seen increased press coverage both via press releases issued by the new in-house press officer and as a result of institutional press releases on which we continue to support our authors. Outlets covering articles published in our journals included the BBC, Metro, CNN, Wired, New Scientist, Science and ABC Australian radio. Several press releases were also picked up by German, Canadian and Spanish national news agencies and subsequently covered by local media.

### Research - Expenditure = £0.3M (8% of total)

In 2017 the Society received 523 applications for funding across its main grants portfolio (excluding Training & Travel), and funded 48 projects totalling £299,210.

The majority of our awards went towards funding scientific ecological research projects. We supported small projects with new and innovative ideas, as well as larger projects that aim to help early career ecologists to establish an independent research career in ecology.

We supported ecologists in developing countries through the Ecologists in Africa grant scheme. This scheme recognises that ecologists in Africa face unique challenges in carrying out research and aims to provide them with support to develop their skills, experience, and knowledge base, as well as making connections with ecologists in the developed world. In November 2017 the Grants Committee agreed that from January 2018, our Ecologists in Africa Grant will open twice per year, in line with all other BES grants. The BES Board of Trustees approved an additional £40,000 of funding for Ecologists in Africa for 2018 onwards, which will allow us to fund a further 4/5 high standard projects each year and start to address the ongoing problem we have had with very low success rates for this scheme.

Finally, funding has also contributed to Outreach grants, which support projects promoting the public engagement of ecology and/or improving skills in science communication.

Training & Travel Grants contributed just over £46,000 to enable 81 PhD students or postgraduate research assistants to present their research at meetings across the world or take part in specialist field training. This included supporting nine students from countries that are classed as lower or middle-lower income, to attend and present their work at Ecology Across Borders, our Joint Annual Meeting in Ghent, Belgium. In addition to this we supported fourteen students from countries classed as lower or middle-lower income to attend INTECOL 2017 in Beijing, China. We recognise the importance of supporting students from developing countries to attend these international meetings, and with this in mind, the BES Board of Trustees has agreed to add £10,000 to the Training &

Travel budget ring fenced for our Annual Meeting.

In November 2017, Grants Committee and Membership Committee made the decision that all Large Research applicants must be a member of the Society for at least 2 years with a view to incentivising membership retention. From January 2018, all applicants who apply for a Large Research Grant have been required to have been a member of the BES for at least one year leading up to the application. In 2019 membership will be required from at least January 2018. From 2020 onwards, this will be increased to two years. The new criteria has been split into three stages to ensure there is not a sudden announcement of the two year's membership to applicants.

In 2013, Grants Committee recognised the importance of the Committee's activities being transparent and made the decision to make all grant success rates publically available on the BES website. Compared to the 2016 rates, there was a large decrease in the success rate for Large Research (14% in 2016 to 7.8% in 2017) and Small Research (16% to 10.5%). Both Outreach (18.8% in 2016 to 12.5% in 2016) and Ecologists in Africa (8 to 5.6%) also saw a decrease in success rates. Going forward, it will be important for the BES to consider how to monitor and mitigate the impact of decreasing application success rates in the longer term. Grants Committee agreed that a case should be made in 2018 to increase overall funding for all grants applications.

We have awarded a number of prizes to outstanding individuals in recognition of their contribution towards the science of ecology, including our annual student talk prize and Best Poster Prize at our Annual Meeting. In addition to these, a People's Choice Award was created for this Joint Annual Meeting, for the poster, voted by delegates, which showed the best use of inter- and trans-disciplinary approaches in their work.

We continue to support the Gratis Book Scheme, the aim of which is to provide ecology and conservation books for free to individuals from outside Western Europe, North America, Japan, Australia, and New Zealand who would otherwise be unable to obtain them. The purpose of this scheme is to spread ecological knowledge as widely as possible. This scheme is a collaboration between the BES (who pay for the postage), the NHBS online bookstore (who co-ordinate and organise the distribution), and the publishers

and authors of the books (who provide the books for free). In 2017, the BES contributed £1,900 enabling 176 books to be dispatched to over 61 countries.

We provide an annual contribution to support scholarships for students from European institutions to attend Tropical Biology Association courses. In 2017, our contribution of £10,000 allowed 20 young biologists from Austria, Belgium, Germany, Netherlands, New Zealand, Poland, Portugal, Sweden, Switzerland and the United Kingdom, attend two of the month-long TBA courses in Amani Nature Reserve, Tanzania and Danum Valley, Borneo.

### Meetings - Expenditure = £0.9M (22% of total)

Our meetings remain a core aspect of the Society, not only ensuring the communication of leading research, but also allowing for the exchange of ideas and networking opportunities, giving rise to cross disciplinary and international collaborations.

In 2017 we held a particularly special Annual Meeting in partnership with the GfÖ (the ecological society of Germany, Switzerland and Austria), NecoV (the ecological society of the Netherlands and Flanders), and in association with the European Ecological Federation. This is the first time these societies have held a conference together and it provided us with a great opportunity to build closer ties with our vibrant ecological communities across Europe and worldwide.

The conference, held in December 2017, attracted 1,500 delegates, our largest conference to date, from over 48 countries. There were 600 talks spread over 13 parallel sessions twice a day, 13 diverse thematic topic sessions, 13 interactive workshops, and 550 posters over two separate poster sessions. At the core of our conference were four internationally renowned speakers to present our plenary lectures: Sue Hartley (BES President), Carlos Herrera (EEF Ernst Haeckel Prize winner), Louise Vet (12 Months in Ecology lecture) and Iain Couzin (Closing Lecture)

Workshops are a staple of our Annual Meeting programme and always highly attended. We retained the extended lunchtime slots for 13 community-generated workshops over the two main days; those who did not attend workshops were able to use the extra time to network in social spaces around

### 2017 SUCCESS RATES

GRANT TYPE	TOTAL RECEIVED	TOTAL NUMBER AWARDED	SUCCESS RATE
Large research	77	6	7.8%
Small Research	190	20	10.5%
Outreach	112	14	12.5%
Ecologists in Africa	144	8	5.6%

the venue. This year we ran 3 full day paid workshops the day before the conference, which all sold out in advance, suggesting that these skills development activities are worth developing within the programme. These workshops covered the topics: Individual Based Models, an Ecology Hackathon, and our Early Career Development Day.

In addition to the core scientific programme, we continue to strive to ensure there are opportunities for delegates to network, meet old friends and build new relationships at the Annual Meeting. Nearly all of our Special Interest Groups (SIGs) put on social events at the meeting, linking up with relevant groups from the partner societies. We also ran our third Science Slam event, which was attended by more people this year and held in centre of Ghent, where the public had an opportunity to attend.

At the heart our events, we want our delegates to feel welcomed, included and represented. We continued to run our successful LGBT+ evening mixer and a Christian morning mixer, both of which were well attended and well received. In addition, this year we held the first Accessibility Network meeting, creating a forum for those with disabilities to meet and discuss barriers to research, career progression and help to develop a stronger support network within the community. Looking forward we will be encouraging our delegates to submit ideas for socials around particular community groups that need support.

Twitter continued to be the main social media platform during the Annual Meeting. Twitter was used to accept questions for our plenary speakers, network and widen participation outside of the meeting venue. Its popularity at our Annual Meetings grows year on year, with the meeting hashtag #EAB2017 trending in Belgium and further afield throughout the meeting. This is not only a great way for delegates to interact at the meeting, but it is also an opportunity for those that could not attend in person

to follow the activities of the conference, widening participation.

This year also saw the largest commercial exhibition we have had at an Annual Meeting, with 36 exhibitors from publishers, equipment companies, training providers and academic institutions. Exhibitors travelled from the across the globe including; America, Switzerland, Italy, Germany, Netherland, Scandinavia, and the UK. This growth is evidence that our meetings are an attractive opportunity for companies to raise their profiles within the ecological community and provides essential additional revenue, to ensure we can maintain competitive registration fees.

In addition to our Annual Meeting, we delivered two successful Symposia. The first of these was a joint meeting with NERC's BESS (Biodiversity and Ecosystem Service Sustainability) programme entitled 'Advances in Biodiversity & Ecosystem Services'. This took place in April at Cardiff University and was organised by Dave Raffaelli (BESS) and Isabelle Durance (Water Research Institute). This attracted 170 delegates, with good representation from both academics and practitioners.

Our second Symposium 'Macroecology of Alien Species: Patterns, Drivers and Consequences of Global Biotic Exchange' was held at Durham University in July and attracted 100 delegates. This was organised by Wayne Dawson (Durham University). Our Press Officer was able to secure a press briefing for this event held in conjunction with the Science Media Centre in London. This allowed speakers to introduce their work and give journalists the opportunity ask questions and check evidence. This was the first of these events we have done in recent years and is something that would be great to consider for future events to increase BES exposure.

Our SIGs provide us with a valuable opportunity to reach new audiences and encourage cross disciplinary working

within the community. We currently have 17 established groups, with 2 more launching in 2018: Paleoecology and Invasion Science. The SIGs organised around 30 events in 2017, which range from skills workshops, annual meetings, early career development, and outreach events. As we now have a larger number of SIGs, the process of budgeting has been improved ensuring events are cost effective and reducing the risk of cancelled events.

## 2.2 Share the excitement and relevance of ecology

This major goal is primarily supported by our work in policy.

### Expenditure = £0.2M (6% of total)

The policy team's work with our members in Wales, Scotland and Ireland shone through as a highlight for 2017. The Scottish Policy Group (SPG) delivered another impressive programme of work including two highly in demand 'Pie and a Pint' events, a policy training workshop in Stirling and a two-day biodiversity conference that was run in conjunction with the Royal Society of Edinburgh. They also organised a breakfast event during Scotland's Environment week, and with the help of the RSPB, convinced MSPs to wear GPS tags for a week. The data was mapped and presented at the breakfast event which providing an opportunity to discuss the kind of ecological research our members are carrying out in Scotland.

2017 was also an exciting year for the Wales Policy Group (WPG) who held their first event in Cardiff. The event quickly sold out and was attended by an impressive mix of academics, policymakers and practitioners. The WPG decided to use the event as an opportunity to identify what the most valuable ways of operating in Wales will be. The outcomes of the workshop were written up and will be used to inform the WPG 2018 programme. The Irish Ecological Association (IEA) also had a productive year on the policy front, developing a policy strategy to help inform their aims and ambitions, as well as supporting the IEA policy representatives in their endeavours.

A major development for the future work of the BES in the devolved nations was the approval of the appointment of a Policy Officer based in Edinburgh by the BES Board of Trustees. This additional

policy staff member comes at such a vital time and will allow the policy team to grow its outputs.

A huge achievement for the policy team was the launch of the Policy Fellowship in 2017. This took nearly two years of preparation. Defra agreed to be the first host government organisation and identified key projects the Fellow could be involved with. Applicants shaped their applications around the suggested projects. Defra were so impressed with the abilities of the candidates they agreed to fund an additional Policy Fellow. Therefore, the BES was able to appoint two Policy Fellows in the first year of the programme.

After a concerted effort in 2016 to encourage the BES SIGs to, where possible, include policy topics in their events programme, the policy team were involved in three SIG events during 2017. The first was held with the Plants, Soils and Ecosystems SIG where the policy needs of addressing atmospheric nitrogen deposition were discussed. At least 50% of the attendees were civil servants. A workshop report was published and disseminated to key policymakers. A second event was held in conjunction with the Climate Change Ecology SIG to identify the latest evidence with which to inform to review of the Climate Change National Adaptation Programme. Finally, just before the Annual Meeting, the Agricultural Ecology SIG ran an event to discuss 'Finding the Common Ground: BREXIT and the Future for Agriculture, Ecology and Food'. The workshop report from this event, (and that of the SPG Pie And A Pint event that discussed agri-environment schemes in Scotland post Brexit) have been used to inform the BES Brexit Policy Working Group's Sustainable Land Management briefing.

With the invaluable help of BES Policy Interns, the first two Policy Guide publications were produced and are freely available on the BES website. These received very positive feedback from members and have been requested by several members for events they are running. In addition, four further interviews were recorded in 2017. The first with Alice Milner is online and the remaining three recorded during the Annual Meeting will be posted in 2018. Therefore, the freely accessible online Policy Guide resources continue to grow and provide public benefit.

Finally, a large focus of the policy team's work has been on gathering evidence and information from our members to inform two key pieces of work the Brexit Policy Working Group are producing on Sustainable Land Management and Marine Conservation. The impressive collection of evidence and member insights will be instrumental to the policy team's work during 2018.

## 2.3 Inspire, engage and recognise talent

This major goal is primarily supported by our work in education.

### Expenditure = £0.4M (11% of total)

The Society supports the ecological education of people of all ages and aims to support ecologists at each stage of their career development through providing free resources, careers advice and a combination of free or subsidised training opportunities for professional development. The BES supports our members in the development of education and public engagement activities related to their research.

Collaborating with the Field Studies Council we are developing teaching resources on the use of maths and statistics in ecology. A fold out chart aimed at 16 – 18 years is in development that will be sent to all schools, as well as additional booklets and online resources available to download for free from the website. Online resources are intended to be usable for 16 – 18 years and undergraduate level.

In 2017, we collaborated with the Physiological Society and Society for Experimental Biology to host a conference for Higher Education careers advisors entitled 'Enhancing the Employability of Bioscience Students'. This enabled us to broaden our reach to all students rather than only those that can attend our events.

In 2017, the Society continued to extend its support for researchers communicating their science to the public, school groups and others. This support is offered through free to attend training courses, guided support in developing and translating science into activities for classroom, exhibition spaces indoors and outdoors alongside up to £10,000 funding for those who are delivering regional engagement activities.

The Society delivered two national public engagement events. The RHS Chelsea Flower Show exhibit focussed on how to manage shady spaces with urban areas, the estimated foot fall through this exhibit was 22,000. Attendance at Glastonbury was a member led initiative that took a series of activities to music festival-goers. The estimated footfall through this event was just over 1,000.

The Society hosted its third Summer School, a residential school for 1st and 2nd year undergraduates from across the UK, including students from Northern Ireland and Ireland. A total of 49 Undergraduate students from 39 universities attended the school, which was free to attend and travel bursaries were offered. Once more we worked with In2ScienceUK and hosted 10 A-level students from black and other minority ethnicities or low income families as part of the above summer school. All school, travel, and some clothing costs were covered for students attending. Students were fully integrated into the science programme and provided with in-depth support and careers mentoring throughout. These students then went onto a celebratory event with students from a broader In2Science programme. The success of this project has led to an expansion and commitment to a dedicated summer school for 30 A-level students and their teachers in 2018.

The Society continued to collaborate with a wide range of societies to deliver careers advice and mentoring for women in science. 60 members were paired up into mentoring relationships from across the UK and overseas. Mentoring and careers advice is provided through a range of free or heavily subsidised events and conferences.

To grow our provision for mid-career ecologists, we launched the first grant writing retreat, supporting 26 ecologists who are seeking their first large grants (over £500,000). The evaluation of this first retreat will be used to inform further planning and additional expansion of our support for this career stage.

A careers programme was delivered at the Joint Annual Meeting in December. This included a low cost early careers day, women in ecology networking session, workshop on careers outside of academia and other skills development opportunities.

The Equality and Diversity Working Group supported members to launch a network for disabled researchers providing them with opportunities to meet, share experiences and identify where the Society is best placed to support them. We have implemented a communications plan that raises the profile of disability within the researcher community on an ongoing basis and seeks to train supervisors and mentors in how best to support disabled colleagues.

## 2.4 Build a sustainable, resilient and efficient Society

We have a duty to ensure the long-term viability of the Society. During 2009, the BES Board of Trustees co-invested in Charles Darwin House to provide new office space for the Society, shared with several other organisations with complimentary aims (i.e. the Society for Experimental Biology). A second building close by was purchased in 2013 and the two buildings together diversify income streams to increase the financial resilience of the BES.

In 2017, we continued to develop and support the BES Journals to further enhance their standing so that they remain a sustainable and significant income stream for the Society in the near future, despite uncertainties over the impact of open access and economic challenges across the world.

The 2015-19 Strategic Plan included an objective to diversify the Society's income as a way of increasing the resilience of the organisation. Half way through 2016 a Fundraising and Development Manager was appointed following the implementation the sustainable fundraising strategy accepted by the Board of Trustees. The Society has developed a set of fundraising guidelines that comply with advice provided by the Charity Commission and has started to develop various initiatives to raise funds, including expanding sponsorship and exhibitions at the Annual Meeting, increasing advertising, applying for grants to support our work and developing a legacy giving programme.

The year also saw work start on reviewing the Society's reserves policy and management of its investment portfolio. The environmental screen of the investment portfolio is being examined and recommendations on developing it will be considered by the Board in 2018.

During 2017, the BES successfully completed a quality assurance programme called POASSO, which has been specifically developed for the voluntary sector. The self-assessment process was being carried out by a working group comprising trustees and staff, and covered a wide range of activities from HR and finance to governance and external communications. The work has ensured that the Society meets the standards of good practice across all its activities.

2017 also saw a major review of the governance of the BES which had not been updated for some time despite the Society growing significantly in complexity and size. The Board of Trustees agreed to reduce its size over a number of years from 22 to 13, meet more frequently, delegate greater authority to Committees and staff, introduce online voting at the AGM for trustee appointments and revise the Articles of Memorandum and Association. The new Articles were accepted unanimously at the AGM in December and the governance changes will be implemented during 2018 onwards.

### 2.4.1 Financial Management and Control

During the year, the BES Committees undertook a wide range of activities in pursuit of the Society's charitable objectives. It is therefore necessary to have budgets and clearly written policies about what activities will be funded and how, and to communicate these clearly to all involved.

The Finance Board considers quarterly management accounts at its meetings through the year, with a narrative provided by the Honorary Treasurer and Executive Director, as appropriate. The narrative focuses on reasons for variation against budget. The quarterly management accounts are also circulated to budget holders.

Annual budgets for the following year are drawn up in the fourth quarter and are approved by the Board of Trustees at their meeting in December.

The BES has a set of Financial Regulations, which must be followed. These Regulations are reviewed annually by the Finance Board.

In 2017 £0.3M (8% of expenditure) was given away in grants. This substantive sum requires careful management by the Society. Applications are reviewed against specific, published criteria. A

Peer Review College reviews grant applications, scoring and commenting on them. Using a Peer Review College ensures that the Society uses the most appropriately experienced reviewers for each grant application. The only exception to this is the Travel & Training Grant scheme, applications to which are reviewed by BES staff and awards are made if the applicant meets the published criteria and there are sufficient funds available.

#### 2.4.2 Investment Policy and Performance

The listed investments held by the BES and managed by Barclays Wealth were worth £6.1M in 2017 and their performance is in-line with appropriate benchmarks. The investment managers produce a quarterly summary of performance for the Honorary Treasurer and Executive Director. The investment managers attend one meeting of the Finance Board a year to discuss performance and general strategy. Day to day investment decisions are delegated to Barclays Wealth in accordance with the agreed mandate. The BES has spread its risk as far as practicable by part owning its headquarters building and holding some of its reserves in long-term deposit accounts as well as in equities, bonds and trust funds.

We have continued to use the services of the Ethical Investment Research Service (EIRIS) to provide us with information, based on a long list of criteria and a scoring system, on the environmental performance of FTSE listed companies. This information is updated twice annually and is used to screen out companies with the worst environmental records and policies from our portfolio. This gives a more objective and consistent basis for excluding companies. Towards the end of 2017 the Finance Board established a working group to review the environmental screen and they will report on their conclusions during 2018. Full details of the existing screen are available from the Honorary Treasurer or the BES Office. A policy of this sort is consistent with the ethos of the BES and is important to maintaining the support of members and the wider ecological research community.

#### 2.4.3 Financial Performance

The accounts show a surplus of £1.2M (surplus of £0.5M in 2016) before net gains on investments of £0.5M (gains of £0.5M in 2016). Total funds of the Society were £11.3M at the end of 2017 (£9.6M at the end of 2016).

#### 2.4.4 Reserves Policy

The Society holds reserves for four main purposes:

1. Meet operational needs;
2. Buffer against the high exposure to publication's income;
3. Deliver specific major projects in strategically important areas defined by the Strategic Plan;
4. Generate additional income through an investment portfolio.

The Society holds reserves to ensure it can meet its operational needs and working capital requirements (the free reserve). The free reserve aims to hold ~6 months operating costs, currently £1.4m excluding third party operating costs and grants, to provide operational cash flow.

The major exposure in the Society's income portfolio is its dependence on publishing income, which represented £4.4m (82%) of annual income in 2017. The high commitment to expenditure allied to substantial exposure to a single source of income is a major long-term risk to the organisation. The Society holds reserves as an Expendable Endowment Fund to mitigate this risk and provide long-term stability. The Expendable Endowment ensures sufficient time to scope alternative operating models should publishing income collapse, and also to transition to the best solution in an orderly fashion. The Expendable Endowment represents ~24 months operating costs, which are predominantly staff costs (23% in 2017) that cannot be immediately adjusted in a new operating environment.

The Society is taking proactive steps to mitigate the over-reliance on a single income source by holding these reserves in an investment portfolio that is managed using an ethical screen. Returns on these investments are re-invested strategically to part fund new activities and specific major projects specified in the Strategic Plan. Designated Funds cover a full-time Management Editor

position exploring new opportunities in academic publishing over a seven year period (£390k) and, as per the publishing contract, to repay the proportionate part of the signing bonus if we exercise the break clause after year 5 (£220k).

The designated tangible fixed asset fund comprises the net book value of fixed assets held by the Society, principally the Society's offices in London. As such, it is not available to meet the general running costs of the Society.

The level of reserves and the Society's financial strategy is regularly reviewed and monitored by the Trustees. The reserves policy is reviewed annually by Finance Committee and recommended changes are considered by the Board in March of that year. The policy was last updated in March 2018.

#### 2.4.5 Principal Risks and Uncertainties

The BES has a risk register. It is reviewed in detail each spring by the BES Committees and then approved by the Board of Trustees in June. The risk register identifies areas of risk, ranks them in priority ordered according to impact multiplied by probability, states who or which Committee is responsible for each risk, states how the risk is currently mitigated and what actions remain outstanding.

Some of the major risk areas are: **A major loss in income from journals** resulting from a change in publication models or a decrease in impact factor. Income from journals is a very significant proportion of the Society's funds. There is continued uncertainty regarding publications models and the timeframe in which this might happen. This risk is being mitigated in a variety of ways. We have a reserves policy that would provide a sufficient buffer to allow a gradual scaling back of the Society's financial commitments if income dropped. The Society has a Head of Publishing to deliver effective and efficient journal management and to ensure that the Society keeps abreast of the latest developments in journal publishing. We diversified our journals' portfolio to include an Open Access journal, *Ecology and Evolution*, by partnering with Wiley. This brings very useful expertise and understanding into the BES on how to run an Open Access title. Each journal has a strategic plan identifying ways in which it can increase its reputation and standing. In

addition, in 2014, we developed a detailed publications strategy closely aligned with the Society's overall strategic plan that provides a long term vision of growth and development for the journals' portfolio. This strategy is reviewed annually.

**A failure to diversify income sources:** Publications make up 82% of the Society's income. To mitigate the risk of a fall in publishing income we not only invest in our publications but we have started to take steps to diversify our income streams. In 2016, we recruited and employed a Fundraising and Development Manager to help achieve our objective of doubling non-publications between 2015 and 2019. The return on our investment portfolio has grown from £151k in 2015 to £656k in 2017 and Charles Darwin House 2 also provides rental income.

During 2017, as part of the governance review, The Board of Trustees agreed to review the way in which the Society managed risk. This review will be completed in early 2018 and its recommendations considered by the Board at their Q1 2018 meeting.

#### 2.4.6 Fundraising Policy

The BES has a fundraising policy which follows the Charity Commission's CC20 "Charity Fundraising: A Guide to trustee duties" guidelines.

Our guiding principles are that we always:

- Protect personal data and confidentiality;
- Treat donors courteously and fairly;
- Respond promptly to donor queries or complaints.

We will never:

- Share donor details with another charity for the purposes of their fundraising;
- Telephone to ask for a donation unless donors have specifically asked us to do so;
- Bombard donors with emails;
- Pass donor personal data to a third party such as a commercial partners or publishers unless we have been given explicit consent to do so.

Our full fundraising policy is available from the BES office.

### 3. THE SOCIETY'S ENVIRONMENTAL IMPACT

Throughout 2017 we undertook an audit of the environmental impact of the Society's activities, publishing, meetings and buildings. Working with external consultants we completed a gap analysis and identified mechanisms to improve how we measure, monitor and reduce our impact particularly in the areas of carbon emissions through transport and sustainable procurement.

The Society has drafted and made available online our environmental policy and we have formed an environmental management systems working group, led by our members to ensure we embed good practice across all our activities and develop a longer term, more ambitious plan for the Society. Additionally we are working with our sister Societies within Charles Darwin House to review where impacts associated with our offices can be reduced.

### 4. FUTURE DEVELOPMENTS

Details of some of the wide range of activities planned for 2018 are given under the headings of the Society's principal aims. The refreshed 2015 – 2019 Strategic Plan has provided an exciting and challenging framework for our activities as the Society moves into its second century. The challenges and opportunities presented by Brexit will continue to be a significant strand of work for the policy team as will the UK Government's newly published 25 Year Plan for the Environment. We will continue to develop our equality and diversity work to ensure that ecology is open and welcoming to people for diverse backgrounds and part of that includes the new A' Level Summer School project. In 2018 we will complete our review of risk management, implement the governance changes agreed at the end of 2017, and develop our environmental audit work. We have a number of exciting new publishing initiatives that will be launched in 2018, extending the range and scope of the research that we publish.

The BES is planning a range of activities and events during 2018 so that we continue to make progress towards our vision of a world inspired, informed and influenced by ecology.

### 5. GOVERNANCE: CONSTITUTION, STRUCTURE AND MANAGEMENT OF THE SOCIETY

The BES is a company limited by guarantee (Registration no. 1522897) and has no share capital. As a registered charity (Registration no. 281213), it is governed by its Memorandum and Articles of Association.

The Board of Trustees is the supreme governing body of the BES. The Board comprises the President, President-Elect or Past President, two Vice Presidents, Honorary Treasurer, Honorary Secretary, Chair of the Education and Careers Committee, Chair of the Meetings Committee, Chair of the Publications Committee, Chair of the Policy Committee, and currently 6 Ordinary Members. The number of Ordinary Members will reduce to 3 by 2020 in line with the governance changes agreed at the AGM in December 2017. The Board is responsible for nominating officer and chair posts and members of the Society are able to put themselves forward for these roles. Nomination for Ordinary Members is open to the whole membership. All members of the Board are elected by the membership at the AGM. All newly appointed Trustees go through a process of induction, which fully briefs them about their roles, responsibilities and the BES. During their tenure trustees have the opportunity to have ongoing training, paid for by the Society, to help them fulfil their duties.

There are nine committees that report to the Board of Trustees. These committees cover specific areas of work such as education, meetings, publications, finance etc., and comprise the Board of Trustee members and, in most cases, ordinary members drawn from the Society's members.

The Society has a governance document that details the structure, terms of reference and membership of the Board of Trustees and its committees. A member of staff supports the work of each committee.

The 2015 – 2019 strategic plan for the Society provides an exciting and challenging framework for the Society's activities as it moves into its second century.

Remuneration of all staff, including key management personnel, is considered on an annual basis by the Society's Personnel Committee. The Personnel Committee considers sector benchmarks when setting salaries.

## 6. TRUSTEES AND ADVISORS

### MEMBERS OF THE BOARD OF TRUSTEES

C Banks-Leite	
R Bardgett	
A Birkett	Appointed December 2017
P Brotherton	
Y Buckley	Resigned December 2017
Z Davies	
M Eichhorn	Resigned December 2017
T Ezard	
W Gosling	
Diana Gilbert	Resigned December 2017
R Hails	
S Hartley	
D Hodgson	Appointed December 2017
Jane Hill	
Nina Hautekèete	
A Pullin	Resigned December 2017
H Roy	
Dawn Scott	Resigned December 2017
I Stott	Resigned December 2017
P Thomas	
L Turnbull	Resigned December 2017
A Vanbergen	
J Vickery	

### EXECUTIVE DIRECTOR

H Norman

### PRINCIPAL ADDRESS

Charles Darwin House  
12 Roger Street  
London WC1N 2JU

### AUDITORS

**haysmacintyre**  
10 Queen Street Place  
London  
EC4R 1AG

### BANKERS

**Barclays Bank plc**  
Leicester  
LE87 2BB

### SOLICITORS

**Stone King LLP**  
Boundary House  
91 Charterhouse Street  
London, EC1M 6HR

### INVESTMENT ADVISORS

**Barclays Wealth**  
Charity Investments Team  
15th Floor  
1 Churchill Place  
London, E14 5HP

### OFFICE BEARERS

President	R Bardgett
Past President	S Hartley
Vice President	R Hails
Vice President Appointed December 2017	D Hodgson
Hon. Secretary	A Vanbergen
Hon. Treasurer	T Ezard

### CHAIRPERSONS OF STANDING COMMITTEES (AS AT DATE OF THIS REPORT)

Finance Committee	T Ezard
Education & Careers Committee	W Gosling
Grants Committee	R Hails
Meetings Committee	Z Davies
Membership Committee	D Hodgson
Personnel Committee	A Vanbergen
Policy Committee	J Vickery
Publications Committee	J Hill

## 7. THE RESPONSIBILITIES OF THE BOARD OF TRUSTEES

The Board of Trustees of the BES (the Trustees and directors) are responsible for preparing the Annual Report and the financial statements in accordance with applicable law and regulations.

Company law requires the Board to prepare financial statements for each financial year. Under that law the Board has elected to prepare the financial statements in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards and applicable law). The financial statements are required by law to give a true and fair view of the state of affairs of the company and of the surplus or deficit of the company for that period. In preparing these financial statements, the Board is required to:

- select suitable accounting policies and then apply them consistently;
- observe the methods and principles in the Charities SORP';
- make judgements and estimates that are reasonable and prudent;
- state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the financial statements;
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Company will continue in business.

The Board is responsible for keeping proper accounting records that disclose with reasonable accuracy at any time the financial position of the BES and enable them to ensure that the accounts comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the BES and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Statement of disclosure to auditors:

- so far as the directors are aware, there is no relevant audit information of which the company's auditors are unaware; and
- they have taken all the steps that they ought to have taken as directors in order to make themselves aware of any relevant audit information and to establish that the company's auditors are aware of that information.

This report has been prepared in accordance with the provisions applicable to entities subject to the small companies' regime.

## 8. AUDITORS

haysmacintyre were re-appointed during the period and have indicated their willingness to continue in office. It is proposed that they be re-appointed auditors for the ensuing year.

**This report was approved by the Board of Trustees on 12 July 2018.**

**Professor Richard Bardgett**  
Member of the Board of Trustees

# INDEPENDENT AUDITOR'S REPORT

## to the Members of the British Ecological Society

### Opinion

We have audited the financial statements of British Ecological Society (the 'charitable company') for the year ended 31 December 2017 which comprise Statement of Financial Activities, the Balance Sheet and the Cash Flow Statement and notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including Financial Reporting Standard 102 *The Financial Reporting Standard applicable in the UK and Republic of Ireland* (United Kingdom Generally Accepted Accounting Practice).

In our opinion, the financial statements:

- give a true and fair view of the state of the charitable company's affairs as at 31 December 2017 and of its net income for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

### Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We are independent of the charitable company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### Conclusions relating to going concern

We have nothing to report in respect of the following matters in relation to which the ISAs (UK) require us to report to you where:

- the trustees' use of the going concern basis of accounting in the preparation of the financial statements is not appropriate; or
- the trustees' have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the charitable company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

### Other information

The trustees are responsible for the other information. The other information comprises the information included in the Trustees' Annual Report. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

### Opinions on other matters prescribed by the Companies Act 2006

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the trustees' report for the financial year for which the annual report is prepared is consistent with the financial statements; and
- the trustees' report has been prepared in accordance with applicable legal requirements.

### Matters on which we are required to report by exception

In the light of the knowledge and understanding of the charitable company and its environment obtained in the course of the audit, we have not identified material misstatements in the strategic report or the trustees' report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept by the charitable company, or returns adequate for our audit have not been received from branches not visited by us; or
- the financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of trustees' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

### Responsibilities of trustees

As explained more fully in the trustees' responsibilities statement set out on page 20, the trustees are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the trustees determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the trustees are responsible for assessing the charitable company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the trustees either intend to liquidate the charitable company or to cease operations, or have no realistic alternative but to do so.

### Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at: [www.frc.org.uk/auditorsresponsibilities](http://www.frc.org.uk/auditorsresponsibilities). This description forms part of our auditor's report.

### Use of our report

This report is made solely to the charitable company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the charitable company's members those matters we are required to state to them in an auditors' report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the charitable company and charitable company's members, as a body, for our audit work, for this report, or for the opinion we have formed.

### Kathryn Burton (Senior Statutory Auditor)

For and on behalf of haysmacintyre  
Statutory Auditors  
10 Queen Street Place  
Statutory Auditors  
London  
EC4R 1AG

Date: 12 July 2018

# STATEMENT OF FINANCIAL ACTIVITIES

Incorporating the income and expenditure account

For the year ended 31 December 2017

	Notes	Unrestricted £'000	Restricted £'000	Expendable Endowment £'000	2017 £'000	2016 £'000
<b>Income from</b>						
<i>Donations &amp; Legacies</i>		5	7	-	12	5
<i>Other Trading Activities</i>						
<i>Investment income</i>	2	16	-	157	173	128
<i>Other income</i>		89	-	-	89	53
		<b>110</b>	<b>7</b>	<b>157</b>	<b>274</b>	<b>186</b>
<i>Incoming resources from charitable activities</i>						
Publications		4,394	-	-	4,394	3,205
Income from conferences		526	-	-	526	421
Subscriptions		151	-	-	151	106
<b>Total income</b>		<b>5,181</b>	<b>7</b>	<b>157</b>	<b>5,345</b>	<b>3,918</b>
<b>Expenditure</b>						
<b>Expenditure on raising funds</b>						
Investment management fees	2		-	20	22	42
<i>Expenditure on charitable activities</i>						
Publications		1,865	-	-	1,865	1,551
Meetings		892	-	-	892	742
Research		342	-	-	342	331
Education		437	-	-	437	267
Policy		237	7	-	244	232
Bulletin and other services		317	-	-	317	279
<b>Total expenditure</b>	<b>3</b>	<b>4,092</b>	<b>7</b>	<b>20</b>	<b>4,119</b>	<b>3,444</b>
<b>Net income before gains on investment</b>		<b>1,089</b>	<b>-</b>	<b>137</b>	<b>1,226</b>	<b>474</b>
<b>Net gains on investments</b>	<b>9</b>	<b>46</b>	<b>-</b>	<b>437</b>	<b>483</b>	<b>509</b>
<b>Net movement in funds in year</b>		<b>1,135</b>	<b>-</b>	<b>574</b>	<b>1,709</b>	<b>983</b>
Fund balance brought forward		4,040	2	5,535	9,577	8,594
<b>Fund balances carried forward</b>	<b>15</b>	<b>5,175</b>	<b>2</b>	<b>6,109</b>	<b>11,286</b>	<b>9,577</b>

All of the above results derive from continuing activities. There are no gains and losses other than those disclosed above. The accompanying notes form an integral part of these financial statements.



# LEAVE A LEGACY TO ECOLOGY

As a BES supporter we want to offer you the chance to write a will free of charge, from your laptop. That is why we have partnered with Farewill, the UK's largest digital will-writing company, to offer 25 free wills to our members. You do not have to include us in your will to take advantage of this offer, but we would love it if you did.

Farewill is trusted by leading charities including: Save the Children, Macmillan, WaterAid, Stonewall and Greenpeace to provide cost effective, quick and legally accurate digital will-writing services to their supporters.

We will invest any gift you make to help ecologists in the UK and the developing world achieve their full potential.

To take advantage of this offer simply log on to [farewill.com/BES](http://farewill.com/BES) and enter the promotional code BES100 at check out. When all 25 free wills have been claimed you will be offered a 50% discount and charged the reduced rate of £45. Use code BES50 at check out to redeem this offer.

\*Making a will through Farewill is not suitable if you own assets outside of the UK or if you have one or more disabled dependents.

# BRITISH ECOLOGICAL SOCIETY

**FOR MORE INFORMATION ABOUT THIS OFFER OR HOW TO REMEMBER ECOLOGY IN YOUR WILL PLEASE CONTACT:**

BES Development Manager Paul Bower  
[paul@britishecologicalsociety.org](mailto:paul@britishecologicalsociety.org)

+44(0)20 7685 2500

or visit [britishecologicalsociety.org.uk/wills](http://britishecologicalsociety.org.uk/wills)

# BALANCE SHEET

For the year ended 31 December 2017

	Notes	2017 £'000	2016 £'000
<b>Fixed assets</b>			
Tangible assets	8	2,588	2,652
Investments	9	6,849	6,114
		9,437	8,766
<b>Current assets</b>			
Debtors	11	1,401	935
Cash on deposit and in hand		1,501	315
		2,902	1,250
<b>Creditors:</b> amounts falling due within one year	12	(833)	(439)
<b>Net current assets</b>		2,069	811
<b>Creditors:</b> amounts falling due within over one year	13	(220)	-
<b>Net assets</b>		<b>11,286</b>	<b>9,577</b>
<b>Represented by</b>			
<b>Unrestricted funds</b>			
General fund		2,587	1,388
Designated - Tangible fixed assets fund		2,588	2,652
		5,175	4,040
<b>Restricted fund</b>		2	2
<b>Expendable Endowment fund</b>		6,109	5,535
	15	<b>11,286</b>	<b>9,577</b>

Included in the above reserves are unrealised gains of £1,142,663 (2016 gains £789,842).

The accompanying notes form an integral part of these financial statements.

The accounts on pages 68 to 82 were approved and authorised for issue by the Board of Trustees on 12 July 2018 and signed on its behalf by

Professor Richard Bardgett  
Member of the Board of Trustees

# STATEMENT OF CASHFLOWS

For the year ended 31 December 2017

	2017 £'000	2016 £'000
<b>Cash flow from operating activities</b>		
<b>Net (expenditure)/income</b>	1,709	983
<i>Adjustments for:</i>		
Investment income	(173)	(128)
Depreciation	73	76
(Increase)/Decrease in debtors	(466)	(270)
(Decrease)/Increase in creditors	614	(46)
<b>Net cash provided by/(used in) operating activities</b>	<b>(1,757)</b>	<b>(615)</b>
<b>Cash flow from investing activities</b>		
Purchase of tangible fixed assets	(9)	(24)
Investment income	173	128
Purchase of investments	(1,183)	(2,327)
Disposal of investments	913	2,278
(Gain) Losses on investments	(483)	(509)
<b>Net cash (used in) investing activities</b>	<b>(571)</b>	<b>(454)</b>
<b>Change in cash and cash equivalents in the year</b>	<b>1,186</b>	<b>161</b>
<b>Cash and cash equivalents at the beginning of the year</b>	<b>315</b>	<b>154</b>
<b>Cash and cash equivalents at the end of the year</b>	<b>1,501</b>	<b>315</b>

The accompanying notes form an integral part of these financial statements.

# NOTES TO THE ACCOUNTS

For the year ended 31 December 2017

## 1. ACCOUNTING POLICIES

### a) Basis of accounting

The financial statements have been prepared in accordance with Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) (effective 1 January 2015) - (Charities SORP (FRS 102)), the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) and the Companies Act 2006. Assets and liabilities are initially recognised at historical cost or transaction value unless otherwise stated in the relevant accounting policy note(s).

The trustees have assessed whether the use of the going concern basis is appropriate and have considered possible events or conditions that might cast significant doubt on the ability of the charity to continue as a going concern. The trustees have made this assessment for a period of at least one year from the date of approval of the financial statements. In particular the trustees have considered the charities forecasts and projections and have taken account of pressures on donation and investment income. After making enquiries the trustees have concluded that there is a reasonable expectation that the charity has adequate resources to continue in operational existence for the foreseeable future. The charity therefore continues to adopt the going concern basis in preparing its financial statements.

### b) Financial Instruments

The BES has elected to apply the provisions of Section 11 'Basic Financial Instruments' and Section 12 'Other Financial Instruments Issues' of FRS 102 to all of its financial instruments. Financial instruments are recognised in the Charity's balance sheet when the Charity becomes party to the contractual provisions of the instrument. Financial assets and liabilities are offset, with the net amounts presented in the financial statements, when there is a legally

enforceable right to set off the recognised amounts and there is an intention to settle on a net basis or to realise the asset and settle the liability simultaneously. With the exceptions of prepayments and deferred income all other debtor and creditor balances are considered to be basic financial instruments under FRS 102.

### c) Income

- i) Subscriptions income:  
All subscriptions income is accounted for in the period to which it relates. Subscriptions receipts in advance are recorded as deferred income.
- ii) Other income:  
All other income has been accounted for on a receivable basis.

### d) Expenditure (including grants)

Expenditure is classified under the principal categories of charitable and other expenditure rather than the type of expense, in order to provide more useful information to users of the accounts.

Charitable activities comprise direct expenditure including direct staff costs attributable to the activity. Support costs have been allocated to activities based on the average staff time spent. Governance costs are those incurred in connection with the management of the Society's assets, organisational administration and compliance with constitutional and statutory requirements. Support costs are allocated on the basis of time spent on each activity.

Grants payable are charged in the year when the offer is conveyed to the recipient except in those cases where the offer is conditional, such grants being recognised as expenditure when the conditions attaching are fulfilled. Grants offered subject to conditions which have not been met at the year-end are noted as a commitment, but not accrued as expenditure.

### e) Depreciation

Depreciation has been calculated to write off the cost of assets over their expected useful lives as follows:

Freehold property - 2% per annum on cost  
Furniture, fixtures and equipment - 33% per annum on a straight line basis.

The Society's policy is to capitalise assets purchased over £1,000.

### f) Investments

Investments are stated at market value. It is the BES's policy to keep valuations up to date such that when investments are sold there is no gain or loss arising. As a result the Statement of Financial Activities only includes those unrealised gains and losses arising from the revaluation of the investment portfolio throughout the year. Disclosure is made in note 9 of the difference between the historical cost and the sale proceeds of the investments sold during the year.

### g) Foreign currencies

Monetary assets and liabilities denominated in a foreign currency are translated into sterling at the exchange rate ruling on the Balance Sheet date.

Transactions in foreign currencies are recorded at the rate of exchange prevailing at the date of transaction.

All exchange differences are taken to the statement of financial activities.

### h) Operating lease

Rentals payable under operating leases are charged against income on a straight line basis over the lease term.

### i) Pensions

BES operates defined contribution pension arrangements, the assets of which are held separately from those of the BES in independently administered funds. Contributions are charged to the income and expenditure account as they become payable.

### j) Fund accounting

General funds comprise the accumulated surplus or deficit and are available for use at the discretion of the Board of Trustees in furtherance of the general objectives of the BES.

Restricted funds are funds subject to specific restrictive covenants imposed by donors or by the purpose of the appeal.

Designated funds comprise funds which have been set aside at the discretion of the Board of Trustees for specific purposes.

All income and expenditure of the BES has been included in the Statement of Financial Activities.

### k) Employee benefits

The costs of short-term employee benefits are recognised as a liability and an expense, unless those costs are required to be recognised as part of the cost of stock or fixed assets.

The cost of any unused holiday entitlement is recognised in the period in which the employee's services are received.

Termination benefits are recognised immediately as an expense when the company is demonstrably committed to terminate the employment of an employee or to provide termination benefits.

### l) Debtors

Trade and other debtors are recognised at the settlement amount due after any trade discount offered. Prepayments are valued at the amount prepaid net of any trade discounts due.

### m) Cash at bank and in hand

Cash at bank and cash in hand includes cash and short term highly liquid investments.

### n) Creditors

Creditors are recognised where the charity has a present obligation resulting from a past event that will probably result in the transfer of funds to a third party and the amount due to settle the obligation can be measured or estimated reliably. Creditors and provisions are normally recognised at their settlement amount after allowing for any trade discounts due.

### o) Judgements and estimates

Judgements made by the Trustee, in the application of these accounting policies that have significant effect on the financial statements and estimates with a significant risk of material adjustment in the next year are deemed to be in relation to the valuation of investments and are discussed above.

## 2. INVESTMENT INCOME

	2017 £'000	2016 £'000
Income from listed investments	163	123
Interest receivable	11	5
	<b>174</b>	<b>128</b>

### 3. ANALYSIS OF TOTAL EXPENDITURE

	Direct Staff Costs £'000	Other Direct Costs £'000	Support Costs £'000	TOTAL 2017 £'000	TOTAL 2016 £'000
Cost of Raising Funds	-	22	-	22	42
Bulletin & Other services	89	50	178	317	279
Publications	436	1,063	366	1,865	1,551
Meetings	79	732	81	892	742
Research	16	312	13	341	331
Education	141	163	133	437	267
Policy	91	64	90	245	232
	<b>852</b>	<b>2,406</b>	<b>861</b>	<b>4,119</b>	<b>3,444</b>
<b>Support Costs</b>				<b>2017 £'000</b>	<b>2016 £'000</b>
<b>Governance Costs</b>					
Governance staff costs				2	8
Audit Fee				9	9
				<b>11</b>	<b>17</b>
<b>Other Support Costs</b>					
Support staff costs				110	53
Non salary staff costs				62	55
Property				156	63
IT costs				68	57
Venue Costs				19	9
Publicity				32	15
Fees / Affiliations				74	47
Office running costs				51	37
Depreciation				73	76
Bulletin				70	68
Outsourced finance & payroll				33	32
Legal & Consultancy				50	9
Website				1	-
Bank charges				51	27
				<b>861</b>	<b>565</b>

\*Support costs are allocated on the basis of time spent on each activity.

### 4. GRANTS

Grant commitments are as follows:

	2017 £'000	2016 £'000
Grant commitments at 1 January	189	125
Awards made during year	460	343
Payments made during the year	(478)	(279)
<b>Grant commitments at 31 December</b>	<b>171</b>	<b>189</b>

Details of significant grant awards are detailed on the BES's website. The majority of grants awarded are to individuals. Grants to institutions are relatively few in number and low value.

### 5. NET MOVEMENT IN FUNDS

is stated after charging:

	2017 £'000	2016 £'000
Depreciation	73	76
<i>Auditor's remuneration</i>		
audit services	9	9

Other than disclosed in note 15 members of the Board of Trustees did not receive any remuneration during the year (2016: nil). Expenses reimbursed to 18 (2016: 13) Members of the Board of Trustees in the year equalled £9,303 (2016: £9,731).

### 6. TAXATION

The BES is a registered charity and as such its income and gains are exempt from corporation tax to the extent that they are applied to its charitable objectives. There is no corporation tax charge for the year (2016: nil).

## 7. EMPLOYEES

The actual number of employees during the year was 24.4 (2016: 21.1)

	2017	2016
Membership	1.7	1.5
Publishing	11.1	10.2
Conferences / Meetings	1.7	2.0
Research	0.5	0.4
Education	4.0	2.5
Policy	2.9	3.2
Society	2.5	1.3
	<b>24.4</b>	<b>21.1</b>
	<b>£'000</b>	<b>£'000</b>

Staff costs during the year amounted to:

Wages and salaries	825	749
Social security costs	84	77
Employer's pension contributions	55	45
Redundancy		22
	<b>964</b>	<b>893</b>

One (2014: one) employee earned £70,000-£79,999 during the year. The employer's pension contributions in respect of this employee during the year was £5,373.

The total employee benefits including pension contributions of the key management personnel were £224,188 (2014: £217,825).

One employee earned £80,000-£89,999 during the year (2016: one employee earned £70,000-£79,999). The employer's pension contributions in respect of this employee during the year was £7,088 (2016: £5,884).

The aggregate benefits including pension contributions of the key management personnel were £271,718 (2016: £262,234), the trustees were not remunerated for services to the charity.

During the year settlement agreements were paid of £nil (2016: £21,854).

## 8. TANGIBLE FIXED ASSETS

	Freehold property £'000	Furniture, fixtures and equipment £'000	Total £'000
<b>Charity Cost</b>			
1 January 2017	2,905	104	3,009
Additions		9	9
<b>31 December 2017</b>	<b>2,905</b>	<b>113</b>	<b>3,018</b>
<b>Depreciation</b>			
1 January 2017	266	91	357
Charge for the year	58	15	73
<b>31 December 2017</b>	<b>324</b>	<b>106</b>	<b>430</b>
<b>Net book value</b>			
<b>31 December 2017</b>	<b>2,581</b>	<b>7</b>	<b>2,588</b>
31 December 2016	2,639	13	2,652

During 2009 the charity purchased a part share (36.1%) in the freehold 12 Roger Street as its new headquarters. It shares the ownership of the building with other biological focused charities and the property is held by a nominee company on trust for the Co-owners as tenants in common.

During 2011 the charity had disposed of 6.1% of the freehold in 12 Roger Street to the Royal Society of Biology in accordance with the original plan to share the ownership of the building with other biological focused charities. This transaction resulted in a gain on disposal of £69,498.

During 2013 the Charity completed the purchase of a part share (21.1%) in the freehold property of 107 Grays Inn Road. As part of this transaction the Charity disposed of a part share of its interest in 12 Roger Street, reducing its interest in that property from 30% to 21.1%. It shares the ownership of the buildings with other biological focused charities and the property is held by Charles Darwin House Limited on trust for the Co-owners. This transaction resulted in a gain on disposal of £95,963.

## 9. INVESTMENTS

	2017 £'000	2016 £'000
<b>Market value 1 January 2017</b>	6,114	5,556
Additions	1,183	2,327
Disposals proceeds	(883)	(1,176)
Net investment gain	483	509
Movement in deposits	(48)	(1,102)
<b>Market value 31 December 2017</b>	<b>6,849</b>	<b>6,114</b>
<b>Historical cost at 31 December 2017</b>	<b>6,108</b>	<b>5,325</b>
<b>Accumulated unrealised gains based on historic cost at 31 December 2017</b>	<b>1,143</b>	<b>789</b>
<b>Realised gain in year based on historic cost</b>	<b>349</b>	<b>456</b>
<b>Represented by:</b>		
UK equity shares	4,171	1,616
Overseas equities	516	2,708
UK fixed interest	320	318
Overseas fixed interest	301	196
UK Other	387	371
Overseas Other	414	117
Market value of listed investments	6,109	5,326
Investment in associated undertaking	-	-
Investment in subsidiary undertaking	-	-
Amounts held in cash	740	788
<b>Total</b>	<b>6,849</b>	<b>6,114</b>

## 10. SUBSIDIARY UNDERTAKINGS

The BES holds 100% of the issued share capital of BES Trading Company Limited, a company registered in England and Wales. The sole activity of BES Trading Company Limited was to organise the 11th International Congress of Ecology in August 2013. At 31 December 2017 the Share Capital and net assets of BES Trading Company Limited amounted to £2 - (2016 £2).

During 2009 the BES acquired 36.1% of Charles Darwin House Limited, a company set up to manage the building. During 2011 shares representing 6.1% were disposed of leaving a remaining interest of 30.0%. During 2013 shares representing 8.9% were disposed of leaving a remaining interest of 21.1%.

At 30 June 2016 the net assets according to the financial statements were £1,000.

	2017 £'000	2016 £'000
<b>Income and Expenditure:</b>		
Turnover	-	-
Cost of sales	-	-
Gross profit	-	-
Interest Received	-	-
Net result	-	-
<b>Balance Sheet:</b>		
Net assets	-	-

## 11. DEBTORS

	2017 £'000	2016 £'000
Trade debtors	953	554
Other debtors	42	14
Prepayments and accrued income	406	326
VAT Refund	-	41
	<b>1,401</b>	<b>935</b>

## 12. CREDITORS: AMOUNTS FALLING DUE WITHIN ONE YEAR

	2017 £'000	2016 £'000
Trade creditors	208	151
Social security & other taxes	22	24
Other creditors	-	2
Accruals	263	33
Deferred income (note 14)	64	40
VAT	105	-
Grants payable (note 4)	171	189
	<b>833</b>	<b>439</b>

### 13. CREDITORS: AMOUNTS FALLING DUE OVER ONE YEAR

	2017 £'000	2016 £'000
Deferred Income (note 14)	220	-
	<b>220</b>	<b>-</b>

### 14. MOVEMENT IN DEFERRED INCOME

	2017 £'000	2016 £'000
As at 1 January 2017	40	30
Released in year	(40)	(30)
Deferred in year	44	40
Deferred in year – falling due more than one year	220	40
<b>As at 31 December 2016</b>	<b>264</b>	<b>40</b>

### 15. MOVEMENT IN FUNDS

2017	Fund balances brought forward 1/1/2017 £'000	Income £'000	Expenditure £'000	Net gains on Investment Assets £'000	Transfers £'000	Fund Balances Carried Forward 31/12/2017 £'000
<b>Restricted</b>						
Alex S Watt Breckland Research Trust	2	-	-	-	-	2
Policy Assistant Fund	-	7	(7)	-	-	-
<b>Total restricted funds</b>	<b>2</b>	<b>7</b>	<b>(7)</b>	<b>-</b>	<b>-</b>	<b>2</b>
<b>Unrestricted funds</b>						
General	1,388	5,181	(4,092)	46	64	2,587
Tangible fixed asset fund	2,652	-	-	-	(64)	2,588
<b>Total unrestricted funds</b>	<b>4,040</b>	<b>5,181</b>	<b>(4,092)</b>	<b>46</b>	<b>-</b>	<b>5,175</b>
<b>Expendable Endowment Funds</b>	<b>5,535</b>	<b>157</b>	<b>(20)</b>	<b>437</b>	<b>-</b>	<b>6,109</b>
<b>Total Funds</b>	<b>9,577</b>	<b>5,345</b>	<b>(4,119)</b>	<b>483</b>	<b>-</b>	<b>11,286</b>

### Designated

#### Tangible fixed asset fund

Represents the net book value of tangible fixed assets in use by the Society and therefore not available to the Board of Trustees to meet future expenditure. A transfer is made each year to reflect the change in net book value.

### Restricted

Restricted funds of £1,985 at 31 December 2017 are represented by cash on deposit (2016 - £1,985).

#### Alex S Watt Breckland Research Trust

Funds administered by the BES in the memory of Alex Watt to provide funding for small scale research projects aimed to enhance our understanding of the conservation of the Breckland Region.

#### Policy Assistant Fund

Restricted donation to support a staff member to work in the policy area. The staff member was appointed in February 2013.

The Society holds €33,180 (2016 €33, 580) on behalf of the European Ecological Foundation. This balance does not form part of these accounts.

### Endowment

Expendable endowment funds of £6,109k at 31 December 2017 are represented by investment (2016 - £5,535k).

#### Expendable Endowment fund

The Society is taking proactive steps to mitigate the over-reliance on a single income source by holding these reserves in an investment portfolio that is managed using an ethical screen. Returns on these investments are re-invested strategically to part fund new activities and specific major projects specified in the Strategic Plan.

### 2016

	Fund balances brought forward 1/1/2016 £'000	Income £'000	Expenditure £'000	Net gains on Investment Assets £'000	Transfers £'000	Fund Balances Carried Forward 31/12/2016 £'000
<b>Restricted</b>						
Alex S Watt Breckland Research Trust	2	-	-	-	-	2
Policy Assistant Fund	-	5	(5)	-	-	-
<b>Total restricted funds</b>	<b>2</b>	<b>5</b>	<b>(5)</b>	<b>-</b>	<b>-</b>	<b>2</b>
<b>Unrestricted funds</b>						
General	888	3,798	(3,400)	50	52	1,388
Tangible fixed asset fund	2,704	-	-	-	(52)	2,652
<b>Total unrestricted funds</b>	<b>3,592</b>	<b>3,798</b>	<b>(3,400)</b>	<b>50</b>	<b>-</b>	<b>4,040</b>
<b>Expendable Endowment Funds</b>	<b>5,000</b>	<b>115</b>	<b>(38)</b>	<b>458</b>	<b>-</b>	<b>5,535</b>
<b>Total Funds</b>	<b>8,594</b>	<b>3,918</b>	<b>(3,443)</b>	<b>508</b>	<b>-</b>	<b>9,577</b>

### 16. ANALYSIS OF NET ASSETS BETWEEN FUNDS

2017	General £'000	Designated £'000	Restricted £'000	Endowment £'000	2017 Total £'000	2016 Total £'000
Tangible assets	-	2,588	-	-	2,588	2,652
Investments	741	-	-	6,109	6,850	6,114
Net current assets / liabilities	1,819	-	2	-	1,821	811
<b>Net assets</b>	<b>2,560</b>	<b>2,588</b>	<b>2</b>	<b>6,109</b>	<b>11,259</b>	<b>9,577</b>

## 17. RELATED PARTY TRANSACTIONS

No transactions have taken place with either Members or Senior Management Team. It is the policy of the BES that Committee members who have an interest in any grant awarding decisions must leave the room at the time the awarding decision is made.

Richard Bardgett – an existing editor of the Journal of Ecology, was appointed as a trustee in the prior year. He continued to be paid at the fixed rate and has received £6,216 (2016 £6,112) in the year. He has received no remuneration in his capacity as a trustee.

## 18. THE GEORGE JACKSON ESTATE

As part of the George Jackson bequest the Society was left as residuary beneficiary of a revisionary bequest. The property passes to the Society upon the death of the life interest. Because of the uncertainty as to value and timing the value of the property is not included with these financial statements.

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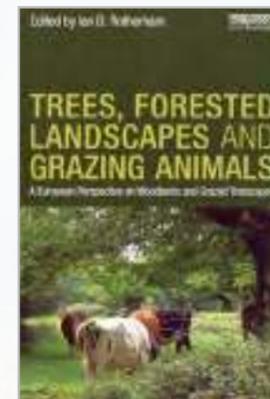
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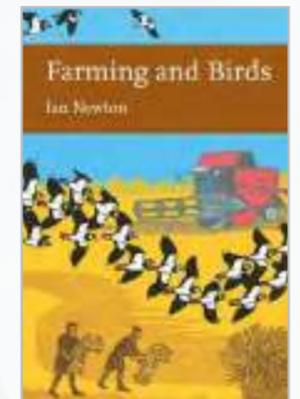
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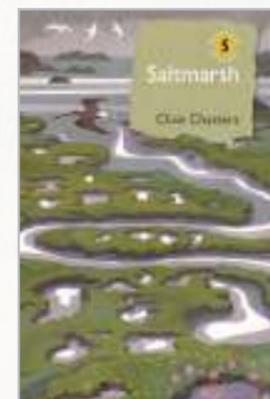
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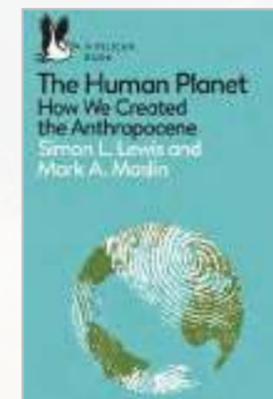
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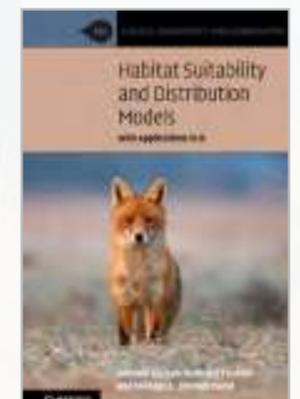
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## LOOKING BACK

The ageing of the researcher and the albatross. Top, a young Henri Weimerskirch with a 10-year albatross, bottom, an old Henri with a 50-year albatross. Henri Weimerskirch has been studying the wandering albatrosses that nest on the Crozet Islands for over 50 years. Out in issue 87:4 of *Journal of Animal Ecology* is a Synthesis paper 'Linking demographic processes and foraging ecology in wandering albatross conservation implications' by Henri giving an overview of this unique 60-year study system.

