

ANNUAL REVIEW 2021-22

A VIBRANT COMMUNITY



BRITISH
ECOLOGICAL
SOCIETY



A BRIGHT AND INCLUSIVE FUTURE

The vibrancy and diversity of the ecological community has been one of the overriding impressions of my first year as President of the British Ecological Society (BES).

I have been impressed by the dedication of volunteers who give so much time to the Society, the quality of the science and policy work I have come into contact with, and the scale of the Annual Meeting in December. This broad and welcoming ecology community is a theme woven through much of this year's Annual Review.

It is perhaps the talent of the young ecologists I have met that has impressed me most. Brimful with confidence and desire for change, the future of ecology is in a good place in their hands.

One example is those involved with delivering the 'Connecting schools with nature' project which has reached hundreds of children in North East England.



I AM PLEASED TO SEE THE BRITISH ECOLOGICAL SOCIETY EMBEDDED IN THIS DRIVE FOR CHANGE AND FIRMLY COMMITTED TO A MORE DIVERSE FUTURE IN EVERY SENSE"

Another is the REED Ecological Network. REED stands for Race and Ethnic Equality and Diversity, and several of their members gave a workshop on effective allyship to the BES Board that provided lots of food for thought for us trustees. They also contributed to the environmental umbrella group Wildlife & Countryside Link's report on race. The BES has signed up to Link's new roadmap to increase ethnic diversity in the environment sector, along with many other organisations. I am pleased to see the British Ecological Society embedded in this drive for change and firmly committed to a more diverse future in every sense.

The BES's purpose is to advance ecology, and I have been involved with two significant projects this year that should bear fruit in the coming weeks and months.

I launched a project exploring the 'Future of Ecological Research in the UK' at the beginning of 2022, asking everyone to send in their priorities for the future. Since then, a panel of top ecologists and a workshop with experts from across research, policy, NGOs and funders have taken ideas further. It's not always easy reaching a consensus in charting a future for the discipline of ecology, but it is a useful exercise to think through what we value and why. We have made great headway and will be producing a report in the New Year that we can all get behind.

This year has also seen a large amount of work on a new strategy for the Society for 2023-25. We have come up with an ambitious plan that the trustees of the BES are happy to invest £3m in over three years. We'll announce the details shortly. Then there is the challenge of making good on that investment and truly 'advancing ecology and creating solutions for a planet under threat'. I truly believe this is an important contribution that the BES is making in addressing the planetary challenges of our age.

Please enjoy all the examples of achievement and impact on the following pages, and thank you for all your interest, commitment, and involvement in your Society over the past 12 months.

Yadvinder Malhi
President of the British Ecological Society

Cover image: Detail of an artwork by Leanne Mulligan created for the REED Ecological Network.

MAKING A DIFFERENCE



EFFECTIVE PROTECTED AREAS MUST BE MORE THAN JUST LINES ON A MAP

In April we launched the Protected Areas and Nature Recovery report, examining the UK government's pledge to protect 30% of UK land and seas by 2030.

Effective protected areas (PAs) have the potential to be the beating heart of the government's approach to the recovery of nature in the UK, the report said. However, even though 27% of UK land and 38% of UK seas are already under some level of protection, the report finds that many protected areas are not delivering for nature and are in poor ecological condition.

The report urges caution over what should count towards the '30x30' target and makes recommendations for the transformative changes required to ensure PAs and surrounding areas are effective in restoring nature.

The lead author of the report, Dr Joseph Bailey, said: "Designation doesn't automatically make an effective protected area. It's simply the first step in a long process towards ensuring long-term ecological benefits for nature and people. An effective protected area needs adequate implementation, enforcement, monitoring, and long-term protection."



A successful launch event with lots of media coverage has meant the report is already having an impact. Experts from Natural England and Defra, the UK government's environment department, have used the report to feed into ongoing policy discussions on the 30x30 target. Umbrella group Wildlife and Countryside Link have referred to it in their response to a Defra consultation on environment targets.

Joseph added: "The 30x30 target presents such a good opportunity that we can't let it pass us by, especially in the face of a changing environment and a future in which we will need resilient ecosystems."

INVESTIGATING WALES'S EMERGING ENVIRONMENTAL ISSUES

As a newly refreshed group, the Welsh Policy Group (WPG) is conducting a horizon scan of emerging environmental issues and upcoming policy in Wales over the next 10 years.

The group's members are assessing our capacity to address different environmental threats and opportunities. The project has already undergone many stages, including several thorough exercises to identify urgent drivers of environmental, political, technological, and social changes which may impact future ecological policy work.



The WPG are now deciding on our top three priorities for action. A summary report of the process and results will be published in early 2023.



FOSTERING A STRONG AND DIVERSE ECOLOGICAL COMMUNITY

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THE ROUTE TO GREATER ETHNIC DIVERSITY IN OUR SECTOR

In October, the BES signed up to environmental umbrella group Wildlife and Countryside Links's route map to a more ethnically diverse environment sector.

Zenobia Lewis, Chair of the British Ecological Society's Education, Training & Careers Committee, says:

"The Wildlife and Countryside Link route map is a timely and hugely important piece of work. For the first time, not only do we have a clear picture of what the sector really is – largely white, in some areas racist, but overwhelmingly ready and willing to change – we have a plan of action to make the sector accessible and welcoming to all who want to be a part of it."

She adds: "By signing up to the Link Route Map, the British Ecological Society has sealed its commitment to breaking down the barriers and removing the challenges that People of Colour face in our sector. I hope others will join us."

SUMMER SCHOOL IS BACK IN PERSON



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For the first year ever, the Undergraduate Summer School ran as a hybrid event in 2022 with an online day followed by a residential trip to FSC Blencathra in the Lake District, UK.

Our Annual Summer School is a chance for undergraduates to kickstart their careers in ecology and bridge potential skills gaps. Students take part in practical sessions boosting their field skills while increasing their ecological knowledge.

Our summer school also offers fantastic networking opportunities, with students, and mentors, as well as ecological academics and professionals, united for a couple of days of intense, jam-packed workshops, lectures, and socials.



IT WAS AMAZING FOR ME TO BE AROUND SO MANY OTHER STUDENTS THAT HAD FACED DIFFICULTIES IN THEIR LIVES AND ACADEMIC JOURNEYS, BUT YET ARE SO RESILIENT, TALENTED AND ENGAGED. THANK YOU FOR GIVING A CHANCE TO THOSE WHO DON'T USUALLY GET ONE!"

Summer School Student, 2022

CREATING SAFE SPACES FOR UNDERREPRESENTED GROUPS

This past year our BES networks for underrepresented and marginalised groups in ecology have continued to grow.

The REED Ecological Network hosted an incredibly successful workshop on effective allyship at the BES annual meeting in 2021, and have since continued to refine and adapt their training, delivering informative sessions at several UK universities. The REED Ecological Network also participated in a *The Niche* takeover, with several of their members producing informative, personal, and inspiring content for our quarterly membership magazine. This year the REED Ecological Network also welcomes a new chair, Jordan Blanchard-Lafayette.

Throughout 2022 the BES has continued its commitment to supporting and providing safe spaces for minority groups. The BES celebrated pride month through our 'Rainbow Research' blog series, where ecologists from across the world shared their research and experiences as members of the LGBTQ+ community. Inspired by the trailblazing success and growth of the REED Ecological Network, ALDER (Advancing LGBTQIA+ Diversity, Equality & Representation) was relaunched at the end of June.

Over the past few months, priorities for this network have been established, and the next couple of years will see a focus on integrating with new BES mentoring schemes, assembling resource banks for LGBTQ+ ecologists, mentors and supervisors, as well as creating space for community discussions.

Spurred on by the success of our new networks, the BES, alongside our dedicated teams of volunteers, is also working on launching further networks offering support for other minority groups.

RAISING THE PROFILE OF ECOLOGY



DENTAL SCANNING TECHNOLOGY USED TO STUDY YOUNG CORAL

A new method for monitoring coral size and growth, published in *Methods in Ecology and Evolution*, reduces current surveying time by 99%.

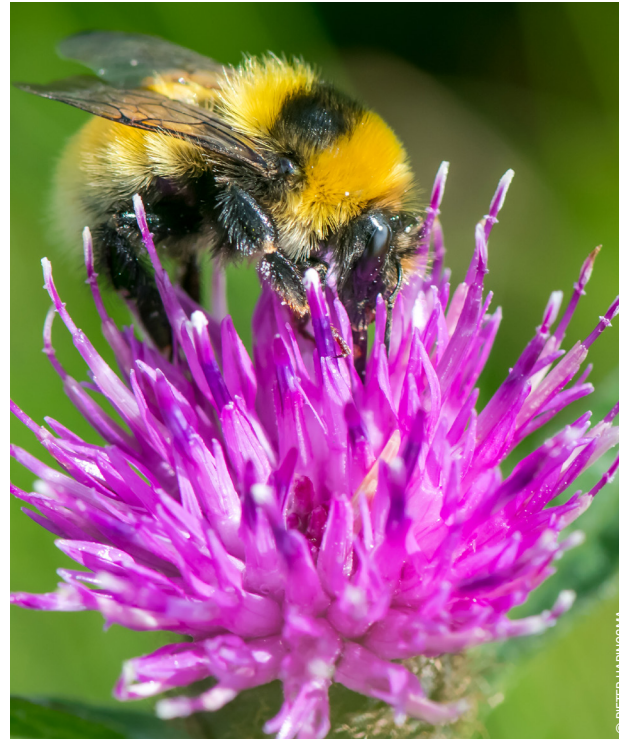
Inspired by a visit to the dentist, Dr Kate Quigley's new surveying method relies on the similarities between coral and our teeth – both being calcium-based and requiring measuring tools that can withstand wet surfaces.

Kate constructed detailed 3D models of small baby coral the same way a dentist might produce an image of our teeth using the latest dental scanning tools. Compared to previously laborious techniques, using dental scanners is a quick, accurate, and non-destructive method of surveying coral.

MULTIPLE HABITATS NEED PROTECTING TO SAVE UK BUMBLEBEES

A study using 10 years of citizen science data from the Bumblebee Conservation Trust's BeeWalk scheme has found that a variety of targeted conservation approaches are needed to protect UK bumblebee species.

The findings, published in the *Journal of Applied Ecology*, offer the most detailed overview of bumblebee habitat requirements across the UK. Reversing the loss of semi-natural areas such as wetlands may be the most generally effective action for bumblebee conservation. However, the study concluded a one-size-fits-all approach will not protect all species. Conservation efforts will need to be carefully tailored to particular species.



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INVASIVE INSECTS COULD KILL 1.4 MILLION TREES ON US STREETS BY 2050

A study published in *Journal of Applied Ecology* estimates that by 2050, 1.4 million street trees in the US will be killed by invasive insects, costing over \$900 million to replace.

Led by McGill University researchers, the study is the first nationwide spatial forecast of street tree mortality from invasive insects. 90% of the forecasted tree

deaths are predicted to be caused by the emerald ash borer, which is expected to kill virtually all ash trees in more than 6,000 urban areas.

The researchers say the forecasts provide a cautionary tale against planting single tree species throughout entire cities.

DOG FAECES AND URINE COULD BE HARMING NATURE RESERVES

Dogs being walked in nature reserves could be negatively impacting biodiversity through nutrients in their faeces and urine.

Researchers from Ghent University were surprised by the levels of nitrogen and phosphorous being added by dogs in nature reserves around the city. The levels were comparable to more well-known sources like fossil fuel emissions and agriculture.

The researchers, writing in *Ecological Solutions and Evidence*, call for land managers, especially in low nutrient ecosystems, to emphasise to visitors the negative fertilisation effects of dogs and encourage dog walkers to remove their dogs' faeces.



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ADVANCING AND PROMOTING ECOLOGICAL SCIENCE

THE INTERDISCIPLINARY FUTURE OF ECOLOGICAL FORECASTING

The BES and Royal Meteorological Society hosted a joint 'Climate Science for Ecological Forecasting' meeting in May—providing a new opportunity to establish interdisciplinary connections between ecologists, meteorologists, and climate scientists.

Interdisciplinary science—bringing people with diverse backgrounds together—has enormous potential to improve our understanding of the world. Yet it is often seen as a challenge. There was little history of collaboration between climate scientists and ecologists—so the conference organisers drew on the power of societies like the BES to bring everyone together.

Dr Vicky Boulton, one of the conference's pivotal organisers, spoke with us on the opportunities and challenges this collaboration brings.

“Anyone interested in the future of ecology and biodiversity should put ecological forecasting on their agenda. Funding is moving towards applied science, science with impact. Now is the opportunity to bring together these interdisciplinary networks.”

The power of ecological forecasting is elevated when fed with the knowledge and expertise of climate scientists, explains Vicky:

“Climate scientists have been forecasting for decades: weather forecasting informs everyday decisions we all make, while climate projections are increasingly used in decision making, planning, and conservation.”

“There is a real need to share knowledge and data across disciplines,” says Vicky.



“A better understanding of the forecasting models and data available will be increasingly valuable to ecologists in ensuring the best mitigation and management strategies are in place.”

Finding a common language was identified as a barrier during workshops at the conference. Scientific jargon was different between fields, and there was no knowledge of the data or techniques available in other areas.

Since the societies' joint conference in May, work is underway to address these barriers through the development of an introductory seminar series, glossaries of key terms, and a 'database of databases' to improve access to a decade's worth of knowledge and data available in both ecology and climate forecasting.

Vicky believes that by joining these discussions, researchers and practitioners can play a crucial part in bringing ecological forecasting to the forefront of future management and policy decisions.



A GLOBAL EVENT FOR INTERNATIONAL LEARNING AND NETWORKING

This year we saw our Special Interest Groups not only return to running face-to-face events, but also deliver these to a global audience.

In May, our Plants-Soils-Ecosystems SIG joined the Mediterranean Institute of Biodiversity and Ecology (IMBE) to hold a three-day conference in Marseille. Delegates enjoyed talks and posters and went on a field trip to the Oak Observatory of Haute-Provence. Here, attendees explored a long-term aboveground-belowground experiment examining the impact of drought on native oak trees.

The joint event highlighted recent research developments while promoting collaboration among international researchers.

OPENING THE DOORS TO ECOLOGY

MAKING THE LATEST RESEARCH METHODS ACCESSIBLE TO ALL

The journal *Methods in Ecology and Evolution* (MEE) began its transition to a fully open-access journal in summer 2022. From January 2023, no articles in MEE will be published behind a paywall.

Until now, the majority of the research published in MEE was only accessible through institutional subscriptions. This move will ensure that ecologists and evolutionary biologists worldwide can readily access the most robust and advanced methods to improve and accelerate their research.

Aaron Ellison, Executive Editor of MEE, said, "Ecological and evolutionary research improves when it uses the best methods. We want everyone around the world who is designing their next set of experiments to be able to access the new and improved methodologies published in MEE without payment."

CONNECTING SCHOOLS TO NATURE

Launched in January 2022, the 'Connecting schools to nature in North-East England' project has seen a fantastic response.

Schools across North-East England have undergone a green transformation – improving access to nature in an area where children spend less time outdoors than anywhere else.

The project has reached >10,000 pupils so far through a combination of regional training sessions, outdoor workshops, public engagement events, and an exciting new digital platform 'BES Encounters'. A third and final module on local birdlife will run from October to December 2022.

Children involved in the project have had the opportunity to get involved in wildlife-friendly activities such as planting wildflowers, building hedgehog highways, and installing insect hotels and camera traps – offering the benefits of nature to those currently least able to access them.

Much of this success is thanks to the efforts of a more than 70-strong group of volunteer 'Environmental Educators' working with the lead teachers and their colleagues at our 50 partner schools.

If you would like to learn more about the project or are interested in supporting these efforts, please get in touch with the team at outreach@britishecologicalsociety.org



AER LAUNCHES A CAMPAIGN ON THE IMPORTANCE OF CO-DESIGNED PROJECTS

Online discovery tool, Applied Ecology Resources, and its associated journal, *Ecological Solutions and Evidence* (ESE), launched a joint campaign to raise awareness of the importance of co-designed projects between different sectors in ecology. An online [AER Live workshop](#) brought together an international audience from academia and ecological practice, while an ESE [Editorial](#) and [Special Feature](#) collated related evidence and insights on the benefits of co-design.

"Co-designed" projects are planned and executed in cooperation between conservation and management practitioners, and academic researchers to achieve real-world impact. These projects benefit from receiving input from a whole host of voices, providing opportunities to anticipate potential barriers, identify on-the-ground priorities and resources, and assess what is and is not possible outside of the oftentimes theoretical realm of academia.

Campaign lead and ESE Lead Editor, Professor Carolyn Kurlle, said: "By addressing potential fears and outlining specific benefits for each party, we hope to increase the willingness of both academic and practitioner ecologists to reach toward each other and discover the myriad of ways co-designed projects benefit everyone."

This is one example of how AER is forging a unique position as a resource for those in ecological, environmental, and conservation work. AER offers many benefits for its membership which include government agencies, environmental NGOs and academic institutions.

AER Applied Ecology Resources

YOUR SOCIETY

The British Ecological Society is the largest scientific society for ecologists in Europe with 7,000 members in 122 countries around the world. We support the global community of ecologists at all stages of their careers through our journals, meetings, grants, education and policy work. The first ecology society to be established anywhere in the world, we have been the champions of ecology for more than a century.

WORLD-RENOWNED JOURNALS

1

Number of journals 'flipped' from hybrid to open access, removing the paywall to access all articles from January 2023.

5,894

Number of reviews completed in 2022 by our generous and talented reviewers. Thank you!

7.5

People and Nature's first impact factor.

PROPELLING ECOLOGICAL CAREERS AND SCIENCE

£24,000

Donated to support future generations of ecologists through our bursaries scheme and education work. Funding from Ecology Resources Ltd. The Span Trust, County Durham Community Foundations, and the Bank Community Foundation.

£300,000

Donated to launch the John L Harper Fellowship, a grant for plant ecology researchers in memory of the former BES President and Darwin Medal winner, John Lander Harper. This money was generously donated by Professor Richard N. Mack, School of Biological Sciences, Washington State University, USA.

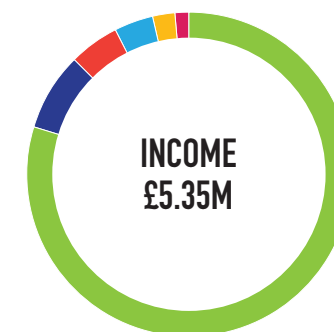


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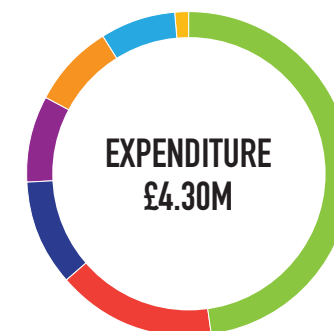


If you would like to contribute to any of our new or existing opportunities to advance ecological science and support the next generation of ecologists please contact Paul Bower at paul@britishecologicalsociety.org

IN 2021 WE INVESTED £4.3M IN FOSTERING ECOLOGY



Publications	£4.28m
Donations	£0.42m
Conferences	£0.27m
Membership fees	£0.20m
Investments	£0.13m
Other	£0.06m



Publications	£2.05m
Conferences	£0.68m
Grants	£0.46m
Member engagement	£0.37m
Education	£0.36m
Policy	£0.32m
Investment fees	£0.05m