

Biodiversity, Wildlife and Ecosystem Health Programme: Beginnings, Reflections, Highlights, Future

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Programme history, purpose and evolution

The Biodiversity, Wildlife and Ecosystem Health (BEWH) programme emerged from an initiative that came out of the College of Medicine and Veterinary Medicine in collaboration with Royal Zoological Society of Scotland, under the auspices of the University's Global Health Academy, that brought together the disciplines of human health, animal health and ecosystem health. Work began on putting the programme together in late 2009 with the first student intake in September the following year. At this stage the programme was run almost single-handedly by then Programme Director Dr Sharron Ogle with support from part-time academic staff and administration staff. In 2010, for the first intake, we had 99 notes of interest in our programme, an impressive number considering it was a new programme. From those 99 interested, half were from Europe, a quarter from sub-Saharan Africa, and the rest were North, South America, and Asia combined. We made 49 offers and ended up with 20 students on programme.

Over the subsequent two years of the three-year part-time programme, new student cohorts were added until in 2013 we had students registered across the whole MSc portfolio. We have been supported by the administrative team of the Biomedical Teaching Organisation for many years, who have been invaluable in the running of the programme. The teaching team was meanwhile expanded and has continued to grow to accommodate new and additional elective courses on an increasingly diverse yet highly relevant range of subjects. The number of students at any one time also gradually grew to around 180, especially around and since the Covid-19 pandemic when there was an increased demand for online programmes. Over the past 15 years we have also hosted five, week-long Summer Schools in Scotland, which have been a real

highlight for both students and staff, blending academic and social activities and creating an even stronger sense of community (Fig. 1).



Figure 1. Students and Staff during the BEWH Summer School 2019 in Edinburgh. Credit: staff member

Since the programme's launch in 2010, it has consistently attracted strong student cohorts. This sustained demand has enabled us to build and retain a dedicated teaching team (Fig. 2) with the breadth of expertise needed across disciplines. Having a dedicated teaching team that is focused just on one programme is fairly unique in academia. The stability of this team brings several benefits: continuity in student-staff relationships that foster community and inclusivity; robust internal quality assurance in curriculum development; resilience across individual courses; and consistent calibration of marking and feedback practices. The strength of our pedagogy, teaching, and student support is reflected in our

repeated recognition in teaching and staff awards, including shortlisted for the CMVM Staff Team Excellence Award and multiple nominations and shortlistings for the Edinburgh University Student Association (EUSA) Teaching Awards over the years.

The Programme's scope is perhaps more relevant and indeed urgent today than it was in 2009 and we have ensured that all our teaching and learning material covers 'real-world' challenges. The programme encourages and applies a holistic, interdisciplinary approach that navigates conflicting interests around, for example, biodiversity loss, climate justice, food security and the central role of ecosystem services. The interdisciplinarity of global challenges and the responses to them is perhaps the principle educational purpose of the Programme, and a realisation that without ecosystem health there is no human health.

Reflections from Dr Sharron Ogle on the programme origins

"15 years is mad. When we started, it was literally just me, and a few colleagues, also working in the online learning sphere at Edinburgh. I suspect maybe 400 or 500 students have come through (PGCert, PGDip, MSc or PPD routes) and over 300 have graduated out of the programme with a master's degree. If you'd said 15 years ago that was how it was going to turn out, I definitely wouldn't have thought that was possible. When, let's be honest, we were kind of making it up a little bit as we went along."



Figure 2. BWEH teaching, support and administrative team in 2024. Credit: Linh Trinh.

Programme ethos

At the core of the programme is a belief that every student arrives with valuable and relevant knowledge worth sharing. We build on that foundation by creating space for students to learn from one another, supported by thoughtful guidance, engaging materials, and feedback that speaks directly to their growth, reinforcing a culture of co-creation, self-directed learning and a vibrant curriculum. Over time, this approach does more than strengthen academic skills. It helps students find their voice, gain confidence in expressing it, and develop the kind of critical thinking that shapes how they engage with the world. Many

alumni describe realising—sometimes only in hindsight—how naturally they now navigate complexity or are confident in expressing their own voice. The impact is reflected in our community too: in the past four years, three graduates of the Biodiversity, Wildlife and Ecosystem Health MSc have been invited to deliver the Student Oration at their Winter Graduation Ceremonies.

Our cohort is intentionally diverse, drawing applicants from a wide range of professional and cultural backgrounds. This reflects our belief that addressing biodiversity loss and ecosystem health requires insight from every sector and society. Many students join us as established professionals, bringing perspectives that enrich discussions and spark student-led learning. In turn, the programme equips them to deepen their existing careers, transition into more environmentally focused roles, or strengthen their ability to teach and communicate about global challenges.

"I'm so happy I took the leap and signed up for this course. It has been a challenging 3 years, but I learned so much and am proud of the work I've completed and that I had such wonderful guidance. I love how the BWEH team is progressive and accommodating of all backgrounds, levels, and skillsets. They really embrace diversity." (Postgraduate Taught Experience Survey Response, University of Edinburgh 2025)

Shifting focus and complexity

In the early years, the programme was largely centred on biodiversity and the protection of individual species. Over time, this focus broadened into a more comprehensive ecosystem-based approach. In recent years, however, both biodiversity and ecosystem considerations have, to some extent, been overshadowed by the growing prominence of climate discourse. While climate change is undeniably critical, its dominance has sometimes displaced other essential priorities. The biodiversity agenda, in particular, has been compressed and marginalised. The challenges facing conservation today feel markedly more complex than they once were. This is partly because the issues themselves have evolved, but also because our collective awareness has deepened. The traditional model—where conservationists from the Global North would enter the Global South and prescribe solutions—has increasingly been recognised as inadequate and, in many cases, counterproductive.

Reflecting on the past fifteen years, the field appears to have undergone successive layers of change—each new priority added atop the last—creating a sense of cumulative complexity that continues to shape contemporary conservation practice. Addressing these challenges requires not only scientific and technical expertise but also the engagement of communicators, journalists, educators, entrepreneurs and many others who are willing to participate in difficult, nuanced conversations. The evolution of the field mirrors broader societal shifts, underscoring the need for inclusive, reflective, and context sensitive approaches to conservation. The curriculum mirrors the complexity of the issues students care about. It takes a holistic, interdisciplinary approach, guiding them

through the tensions surrounding biodiversity loss, climate justice, food security, and the role of ecosystem services. A key attribute of the programme has always been the emphasis given to reflective practice. This facilitates both critical thinking and more recently, the concept of positionality. This latter approach responds to and embraces the different individual, collective, socio-economic and cultural perspectives that underpin global challenges acknowledging the potential biases that may influence discourse at a local and international level. Students consistently tell us that this blend of perspectives—combined with the diversity of their peers—is one of the most valuable aspects of their experience, shaping both their understanding and their sense of purpose (Fig. 3).



Figure 3. Word cloud generated by alumni and current students during an online event to celebrate the programme's 15th anniversary.

Changing curriculum and alumni contributions

We didn't use video conferencing when we started in 2010 as everything was very much text-based and very low-tech, to accommodate connectivity issues and time zones differences in our globally distributed student cohort. Over the years, we have introduced many more audio-visual resources as well as live sessions and online 1-to-1 meetings. However, our core content remains rooted in our low-tech and asynchronous beginnings, because we know that pedagogically all the bells and whistles don't necessarily lead to better academic performance and, nothing we do can overcome the issue of time zones. Imagine that during our 15th Anniversary event in October 2025, it was the first time Sharron had seen the faces of some of the very first cohort of students!

When we started, we had two compulsory courses, and only eight elective courses. We did a lot of course sharing in the early days, because we'd just started. Now we have three compulsory (PGCert) courses and offer 27 electives. Some of those are still drawn from other programmes, but most are delivered from within our programme. This suite of elective courses allows students to shape their own portfolio of specialist areas to enable an even more 'bespoke' profile to their (PGDip) programme.

Some of our elective courses have really been developed in response to our students and alumni. Our programme integrates alumni widely as guest tutors, to fill gaps in teaching team subject knowledge, share practitioner experiences and increase representation, and greatly improves the student's overall learning experience (Devenish-Nelson and Ogle, 2022; Devenish-Nelson and

Sinclair, 2025). Our engagement of alumni as guest tutors reinforces both the value of our growing community of practice and provides beneficial networking opportunities for current students. For example, the Conservation Psychology course was developed by an alumnus who did a psychology project in her third year. More recently, the Conservation Finance course was co-created with three of our alumni with expertise in this area. By drawing on the professional experience of our alumni we are able to create highly topical and diverse elective courses to strengthen our interdisciplinary portfolio.

Reflections from Dr Sharron Ogle on engaging alumni in teaching

"We've gone, well, great, let's harness that and make something out of it. I think we've always been a programme that's been really open that way. One of the strengths, and one of the sources of pride over the years, is being able to incorporate the vast experience of our students and alumni."

While the traditional 'dissertation' style final year (Written Reflective Element) remains the standard route to Masters, since 2022 we have offered an alternative route built around a combined 30 credit project (Applied Interdisciplinary Research) that has a practical application, supplemented by a further 30 credits from the second-year elective offering. This alternative route was developed in part due to feedback from students who are already advanced in their careers and did not require a traditional dissertation, but rather an opportunity to apply their learnings to develop a resource with real-world application. So far, the uptake of this route has been high, and we've seen some amazing resources created that have subsequently been implemented (e.g. pollinator action plans, education materials, policy briefs). Both of the routes to Masters are led by the individual, empowering them to identify and define a project that is pertinent to their specific interests.

Intangible value of Summer School

Summer School has been an integral part of our curriculum since the inaugural one in 2015 (Fig. 4) and subsequently being held every two years (pandemics and funding allowing). As online distance learners, our student cohort miss out on the face-to-face aspect of being an MSc student. Although we work hard to build community and we know that students can feel part of a community without ever meeting each other or the programme team in person (Ogle 2018), we also know that there is a tangible impact of attending a Summer School on student's feeling of community, that filters into their remaining time on the programme and in their support network after graduating. Summer schools provide a vital opportunity for students to develop relationships between year groups and between staff and students, as well as offering a chance to exchange ideas and knowledge. Bringing these groups together physically is a motivating space where barriers are broken down through sharing of people's ideas, values and lived experiences.



Figure 4. Students participate in the first BWEH Summer School in Edinburgh and the Highlands in 2015. Credit: Rob Thomas

Alumni impact

A significant outcome of the programme's 15 years of operation has been the emergent global network of over 400 alumni forming a community of practice across sectors, cultures and international boundaries (with over 130 members in our alumni LinkedIn group). The capacity to understand and examine the underlying science and to translate this into accessible and meaningful language and action is a critical purpose of this programme. It empowers our graduates (Fig. 5) to be at the forefront of the democratisation of environmental decision-making, enabling bottom-up and top-down responses to global challenges (BWEH 2025). A recent survey (BWEH 2023) of our alumni demonstrated significant programme satisfaction (96%), with most alumni feeling part of a community and valuing the diversity of our student cohort (Fig. 6). Our metrics indicated notable transformations in alumni transitioning into professions or leadership roles within the environmental sector. The perceived impacts reported by our alumni were overwhelmingly positive for conservation and individual capacity. We hear so many wonderful stories of local, national, and international impacts our alumni are having in the conservation and wider world - too many to mention here!



Figure 5. Students and staff celebrating at the 2024 graduation ceremony. Credit: Christina Philippou

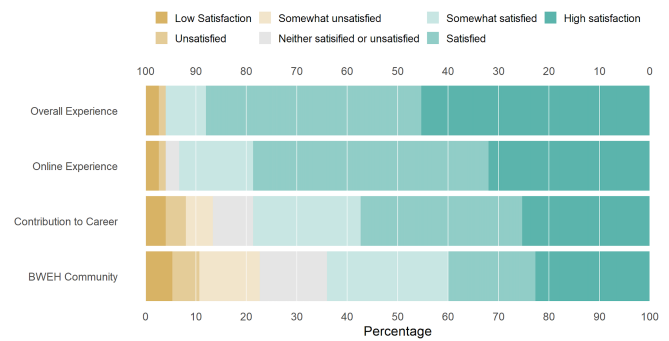


Figure 6. Results of a 2023 survey showing alumni satisfaction for elements of the BWEH programme (BWEH 2023).

That the Open Journal of Biodiversity and Ecosystems has been set up and is run by students and alumni of our programme is further testament to the motivation, innovation and capacity of our students. The journal's interdisciplinary focus is a true reflection of our programme's ethos and principal educational purpose, and we are excited to support and follow the journal as it grows. Further, the hugely successful BWEH 15th Anniversary Event (Fig. 7) was also organised by alumni, showcasing their dedication to the programme. It was an incredible event that was full of joyful reconnections and celebrations of our community.



Figure 7. Screenshot of some of the participants at our BWEH 15th Anniversary Event in October 2025.

Diversity and Representation matters

Thinking about the future, a significant gap that remains in our student cohort is the limited representation of voices from the Global South, which is of central importance to global conservation practice. We know that the impact of our programme is particularly high for our Global South alumni. We believe that meaningful representation is essential for learning, for improving decision-making, and for ensuring that conservation approaches reflect the realities experienced by those most affected. The conservation field is in constant motion, continually adapting to shifting global dynamics, and the ability to keep pace depends on the inclusion of diverse viewpoints. This ongoing evolution mirrors broader societal changes and reinforces the need to move beyond outdated models. However, financial barriers continue to restrict participation from the Global South, and although initiatives such as the Commonwealth Scholarship Programme have expanded access, challenges persist. In 2026-27, we are excited to be welcoming our first intake of MasterCard Foundation Scholars and hope that this is the

start of greater access to online education for African students.

Reflection and Continuity

We have a deep sense of gratitude for all those who have participated in the programme, as well as for the staff who have supported it throughout its development. Each cohort brings together an exceptional group of highly motivated and intellectually curious individuals, and it is this combination of dedicated participants and committed staff that contributes to the programme's success. One of the most rewarding aspects for us is the ability to witness the impact of this collective effort—seeing how the knowledge, dialogue, and experiences cultivated here translate into meaningful contributions through the work of our graduates. It is a privilege to occupy this intermediary space, guiding participants through course choices, facilitating important conversations, and supporting them as they navigate their academic and professional journeys. The hope is always that they will emerge from the programme equipped to achieve something truly significant.

Reflections from Dr Sharron Ogle on coming full circle

"It's really nice to be in this middle space where we can help navigate people through course choices, through conversations... and then hopefully to go out the other end and do something really special. Seeing this happening now gives me a really nice sense of coming full circle. Starting with very little, and a massive leap of faith with the first few groups of students and now coming to this point."

Shaping the Future

As we reflect on our 15th Anniversary, we are also facing big changes to the programme. Dr Sharron Ogle stepped down as Programme Director to go on to new adventures in early 2026, when Rob Thomas and Dr Ellie Devenish-Nelson took over as co-Directors. It is difficult to fully articulate the work and dedication that Sharron has invested, since its inception, in the programme, the student community and the teaching team (Fig. 8), but we endeavour to continue the success and the recognition that

the programme has enjoyed as a result of her inspirational leadership. Rob and Ellie look forward to leading the programme and our amazing team for this next phase and will do our very best to fill the big shoes that Sharron has left behind. As we move forward with (for now) a slightly smaller team, we will inevitably have to make some changes to the shape and content of some of the programme, although we do envisage some exciting opportunities for our future students. However, it is non-negotiable to us that we maintain the quality of teaching and learning as well as the overall student experience that is so important to us and our student body.

Sharron's final thoughts on leaving the programme: staff, students, impact, and pride

"I'm going to be leaving the programme, and I've felt really positive about that. I'm very grateful for those that have made it happen. I feel quite overwhelmed, actually, by just the amazingness of everybody. I couldn't have done it myself. I know things are just going to go from strength to strength. The team that are in place now are really amazing, and I'm really happy to hand that over. It's moments like this [15th Anniversary event] that you just, for me, recognise what has happened over the last 15 years. Now it just feels like such a professional space that I don't think I could have made myself. With all these amazing professional people who now are with us, it feels proper. There's been such buy-in and commitment from people to learn and talk to each other. You can't ask for more than that. I feel immense pride."

Acknowledgements

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