









Towards fairer conservation: Perspectives and ideas from early-career researchers

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Abstract

1. The Black Lives Matter Movement, which gained unprecedented global momentum in mid-2020, triggered critical reflection on systemic discrimination of disadvantaged groups across many domains of society.
2. It prompted us, as early-career researchers (ECRs) in conservation science, to examine our own awareness of ongoing injustices within our field, the role we play in perpetuating or countering these injustices, and how to move forward.
3. Colonialist ideologies and power dynamics throughout the history of conservation practice and research have left a long-lasting legacy of inequality and systemic racism. While improvements have been made, these legacies continue to influence teaching and practice today.
4. In this perspective piece, we reflect on the impacts of conservation's colonial past and how the sector has developed. We then explore how current traditional routes into conservation, and the dominance of these approaches, can leave ECRs underprepared to address modern-day conservation issues due to a limited understanding of conservation's history and key theories from other fields. We end by offering a set of suggestions encouraging others to learn and practise fairer and more inclusive conservation practices.

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KEYWORDS

fairer conservation, inclusivity, equality, early-career researchers, research ethics, reflexivity

1 | INTRODUCTION

The Black Lives Matter movement, founded in 2013 in response to racial inequality in the United States, gained international momentum in 2020 (Garrett, 2017; Kennedy-Macfoy & Zarkov, 2020). Here

in the UK, it triggered wider critical reflection on systemic discrimination of disadvantaged groups across many domains of society. The topics and issues highlighted by the movement are not new, and have been studied and discussed for decades (e.g. Anderson, 2015; Barnett, 1993; Bhatt, 2013; Morris, 1986; Perry, 2016). However,

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for us and others (Chaudhary & Berhe, 2020; Cronin et al., 2021; Nature Ecology & Evolution, 2020a; Schell et al., 2020), it was pivotal in triggering more intense self-reflection and critical evaluation of our knowledge, or lack thereof, on issues relating to the ongoing inequalities and systems of oppression that remain prevalent within our society. It also compelled us to explore the history of our field and critiques of it from other disciplines, examine the dominance of Western science-based values and knowledge systems, and question the disproportionate weight that privileged, and predominantly white, scientific and charitable institutions hold in conservation decision-making in many countries today. Through this exploration, we realised we lacked depth in our knowledge and understanding of conservation's history, despite many collective years of academic training and field experience, and had failed to adequately consider its impacts on the present day. Seeking critiques and experiences that discuss the legacy of colonial practices, alongside existing inequalities in conservation science, also highlighted key theories and methods from other fields that could help the sector achieve more inclusive and ethical practice.

We start this article with how we began our journey, exploring and reflecting on the legacy of conservation's colonial past. We acknowledge that this is a huge topic and do not aim to cover the details of this extensive history, as thorough treatments exist elsewhere (e.g. Adams, 2004; Domínguez & Luoma, 2020; Finney, 2014; Garland, 2008; MacKenzie, 1988; Taylor, 2016). However, we feel that summarising some of this important body of work may be a helpful starting point for those who are new to these topics. Students and ECRs from a natural science background are less likely to have come across this literature (Bennett et al., 2017; Slater, 2021), and the language, methods and philosophies used across the social sciences, humanities and other disciplines (where most critiques of conservation exist) can be daunting and unfamiliar. We also discuss the progress made, highlighting how far the conservation movement has come in considering the ethical and social dimensions of its strategies and demonstrate that further improvement is possible. We then reflect on our education and experiences, and the consequences of practising conservation with limited understanding of conservation's history and key theories from other fields. We end by suggesting a roadmap for change that ECRs can take forward as the next generation of conservation scientists and practitioners which we hope will better prepare us for the diverse and multi-dimensional conservation challenges ahead.

1.1 | Conservation's origins and the legacy of colonialism: A brief overview

Conservation science is a discipline widely viewed as a force for positive change, working for the benefit of all people through protecting the Earth's ecosystems (Kareiva & Marvier, 2012; Mace, 2014). However, one of the most dominant models of conservation, the protected area-based model (Anaya & Espírito-Santo, 2018; Maxwell

Positionality Statement

We are eight women of European, Brazilian and Chinese ethnicity and, at the time of writing, are in our final doctoral year working at UK conservation and academic institutions. We have a mean age of 32 (range: 27–45), and between us have experience living in Brazil, China, England, Namibia, South Africa, Spain, Scotland and the United States. We have undergraduate degrees in the environmental sciences from the UK, the United States, Brazil and South Africa, with Master's degrees from the UK and Brazil. All authors have had the privilege of conducting research and/or practising conservation science internationally, working across South America, sub-Saharan Africa, the Indian Ocean, Australasia, East Asia and Europe. Through our lives and work, we have experienced some of the many ways in which uneven power and racial dynamics remain within the conservation sector today and affect conservation outcomes. We acknowledge the limitations in our understanding of the issues we raise, recognise the privilege that our backgrounds have given us, and know that our experiences and voices are not fully representative. However, we hope to create a space for further introspection and generate wider discussion on these issues across the conservation science community, particularly with other ECRs from similar backgrounds who might be at a different stage on this journey.

et al., 2020; Naughton-Treves et al., 2005), can be traced back to colonial concepts of land acquisition and ownership, protectionism and the safeguarding of 'wilderness', many of which promoted ideas of white privilege (Chaudhury & Colla, 2020; Hutton et al., 2005; Kashwan, 2020).

The concept of preserved areas originated from 11th-century European aristocracy, who banished rural 'peasants' and prohibited public use of the land to allow hunting, recreation and scientific exploration by the noble classes (MacKenzie, 1988). These practices were reframed along racial lines by North America's settlers during the 19th century and consolidated throughout Europe's colonial era from the 15th century onwards (Kashwan, 2020; MacKenzie, 1988). Many local indigenous communities were removed from their land and prevented from practising long-standing livelihood strategies, like harvesting wild resources and hunting, in efforts to 'protect' wildlife and ideals of 'pristine', people-free environments (Adams, 2004; Fabricius et al., 2004). Land and resources that had once been managed locally became centrally governed, with new institutions, fines and fences radically altering the existing relationships between people and their natural environment (Agrawal & Redford, 2009; Fabricius et al., 2004; MacKenzie, 1988; Waithaka, 2012). For example, across Southern and East Africa, a system of national parks was established where

local people were evicted and hunting for subsistence was deemed 'savage' and criminalised, while hunting by colonial and visiting European elites was allowed (Adams, 2004; MacKenzie, 1988). A driving force for much of the legislation came from the European hunting and natural history elite (MacKenzie, 1988). Indeed, one of the world's oldest conservation organisations, Flora and Fauna International, was originally established in 1903 as the Society for the Preservation of the Wild Fauna of the Empire (SPWFE) to influence the British Colonial administration on game preservation (Adams, 2004; Prendergast & Adams, 2003). Such top-down 'fortress' models of conservation dominated for much of the 19th and 20th centuries (Brown, 2003; Büscher & Whande, 2007; Dinerstein et al., 2019; Waithaka, 2012). They expanded rapidly, first through the actions of colonial powers and later by newly independent states, often with the assistance and influence of Western governments, international institutions and conservation NGOs, which also grew rapidly in prominence and power over this time (Adams, 2004).

Despite the expansion of such approaches, and their continued prevalence today, problems with fortress conservation began to be recognised in the mid-20th century. The ongoing loss of wildlife and natural habitats outside protected areas (Child, 2009; Naughton-Treves et al., 2005), the social impacts of such approaches (Adams, 2004; Child, 2009; Colchester, 1994; Pimbert & Ghimire, 1997) and the need for local support to achieve conservation goals (Fabricius et al., 2004; Fiallo & Jacobson, 1995; IIED, 1994) became increasingly apparent. During this time, there were also shifts towards participatory approaches in rural development, a rise in market-based approaches (Hulme & Murphree, 1999), and structural adjustment policies which meant significant financial cutbacks on governments' abilities to effectively manage protected areas and achieve socio-economic development (Fabricius et al., 2004). A combination of these factors led to a wide range of conservation strategies being developed over the following decades. Many of these focused on sustainable use and participatory strategies that aimed to offer people economic incentives for environmental protection (Johannesen, 2004; Nelson & Agrawal, 2008), such as Integrated Conservation and Development Projects (ICDPs) and Community-Based Natural Resource Management (CBNRM) (Alpert, 1996; Brandon & Wells, 1992; Brosius et al., 2005). Utilitarian strategies were carried forwards in the early 21st century with the development of the ecosystem services concept, among others, which promoted the view that conservation should be driven not only by nature's intrinsic value, but also its value to people (Daily & Matson, 2008; Mace, 2014).

While these were steps forward, such strategies were based on a neoliberal worldview that contrasts with the non-market philosophies of many societies (such as indigenous peoples). They fell short of adequately capturing intangible (e.g. cultural, spiritual, religious) values placed on nature (Chan et al., 2012; Salomon et al., 2018). They also failed to account for the burdens of conservation borne locally by socially and politically disadvantaged communities (Green et al., 2018; Igoe, 2006; Neudert et al., 2017). In response, concepts

such as ecosystem services were redefined and expanded to better account for intangible values and to be more inclusive of broader social and cultural perspectives (Chan et al., 2012; Klain et al., 2014). Cultural ecosystem services and relational values (which represent the multiple preferences, principles and virtues of human–nature relationships) are now key concepts which support the incorporation of diverse experiences into conservation decision-making, formally acknowledging that there are multiple ways through which to view, value and interact with the natural environment (Chan et al., 2016, 2018; Gould et al., 2020). Further progress has also been made through a drive towards participatory, stakeholder-focussed and various community-led models of conservation (Anthwal et al., 2010; Berkes, 2007; Brown, 2002; Greiber et al., 2009; Rayne et al., 2020; Salafsky & Wollenberg, 2000). Dedicated conservation researchers and practitioners around the world, together with local and indigenous communities, have been pushing for these changes at various scales for many decades and substantial progress has been made (Armitage et al., 2020; Brosius, 2004; ICCA Consortium, 2021; Sowman et al., 2021; West & Aini, 2018). Encouragingly, such approaches are starting to be integrated into global policy processes, for example, through the recognition that diverse forms of scientific and non-scientific knowledge need to be included in the Intergovernmental Panel of Biodiversity and Ecosystem Services (IPBES) processes (Díaz et al., 2019; Díaz-Reviriego et al., 2019; Pascual et al., 2017).

Despite these steps towards more inclusivity, much has been written on the shortcomings of many of these approaches in shifting the power balance and enabling truly locally-led, bottom-up conservation which benefits local people (Campbell & Vainio-Mattila, 2003; Homewood et al., 2020; Keane et al., 2020; Maxwell et al., 2020). At the same time, there is increasing evidence that indigenous and/or locally led approaches are highly effective at conserving biodiversity (Dawson et al., 2021; Garnett et al., 2018; Sze et al., 2021). However, most decisions and policies on protecting and restoring biodiversity continue to be made by actors from urban societies, predominantly in the Global North (Kothari, 2021), despite most of the world's biodiversity and priority conservation sites being in the Global South. Evictions and restrictions on lives and livelihoods in the name of conservation remain common (Duffy et al., 2019; Pemunta, 2019), while local understanding and experiences are often overlooked, criticised or suppressed at national and international levels (Domínguez & Luoma, 2020; Pemunta, 2019). The resultant power dynamics contribute to uneven decision-making, often with negative outcomes for both people and nature (Garland, 2008; Survival International, 2018; Zafra-Calvo et al., 2020).

Another consequence of these dynamics and conservation's origins is that decisions and teaching continue to be dominated by Western scientific thinking, especially the natural sciences, and philosophies from richer, industrialised nations (Gardner, 2020; Pascual et al., 2021; Trisos et al., 2021). From our experiences and wider discussions to date, insights from other disciplines and knowledge systems are rarely considered or taught, despite being important in understanding the challenges of global biodiversity loss

(Bennett et al., 2016; Clark, 2001). The fields of ecology and natural history, which first highlighted the 'biodiversity crisis' (Biermann & Mansfield, 2014), evolved from Western scientific thinking rooted in philosophies from the Enlightenment era (Das & Lowe, 2018), Transcendentalism (Friesner, 2017) and others (Adams, 2004; White, 1967). These philosophies often promoted a view of humans as separate from 'nature'—a view that continues to influence how conservation is perceived, taught and practised (Gardner, 2020; Pascual et al., 2021; Waithaka, 2012). These fields of study evolved into the discipline of conservation biology, and the more recent conservation science, we see today (Bennett et al., 2017; Chaudhury & Colla, 2020; Jacobson & McDuff, 1998). Though various conservation philosophies have developed (Büscher & Fletcher, 2019; Kareiva & Marvier, 2012; Mace, 2014), the continued dominance of 'Western science' in conservation means other ways of understanding and interacting with the natural world are often overlooked and/or replaced. This can alienate indigenous and local communities and undermines their knowledge systems and ways of life (Santos, 2014; Tom et al., 2019). A focus on quantitative or natural science methods, 'Western science' and traditional conservation can also inhibit thorough critiques and discussions with experts from other fields (e.g. sociology, anthropology or political ecology) with different views on conservation and its goals (Robbins, 2019; Shobbrook, 2016). This can contribute to the uptake of now normalised, yet controversial, practices such as militarised conservation (Duffy et al., 2019; Kraak, 2017; Mabele, 2017; Marijnen & Verweijen, 2016). At the same time, there are numerous research groups and conservation practitioners embracing pluralistic knowledge systems and values for conservation. Such approaches to conservation are becoming increasingly common, with examples from the UK (e.g. the Interdisciplinary Centre for Conservation Science, the Durrell Institute for Conservation and Ecology and the BIOSEC project (BIOSEC, 2021; DICE, 2021; ICCS, 2021)) and across other regions (e.g. the Decolonising Conservation project in Papua New Guinea; Pathway to Canada Target 1; and Manaaki Whenua Landcare Research in New Zealand (Canadian Parks Council, 2021; CRI, 2021; West & Aini, 2018)).

A further consequence of the colonial influence on conservation is that non-white conservation figures have largely been written out of conservation's history, while white Western conservationists have become celebrated household names (Das & Lowe, 2018; Garland, 2008; Sebunya, 2017). Furthermore, in many Western countries, the environmental workforce often lacks diversity (Taylor, 2015). In England and Wales, just 0.6% of environmental professionals are non-white, making the environment the second-worst sector for diversity after farming (Norrie, 2017). This perpetuates 'white saviour' narratives in conservation, and highlights the (often unintentional) institutional racism still present in the sector (Hart et al., 2020; Mumby, 2018; Schell et al., 2020). This not only fails to represent many who have been a part of conservation's history, but can also alienate audiences, discourage diverse participation in conservation and hinder positive conservation outcomes (Das & Lowe, 2018; Jacobs, 2020; Margules et al., 2020). Encouragingly, a

number of organisations within the sector have begun to address issues of racism and links to colonialism in their history through internal reviews, public acknowledgements and events (e.g. Antonelli, 2020; BBC, 2020; Cornish, 2020; National Trust, 2020), and such topics are being increasingly discussed in science and conservation more generally (Baker et al., 2019; Das & Lowe, 2018; London NERC DTP, 2021; Nature Ecology & Evolution, 2020a, 2020b; Pettorelli et al., 2021; West & Aini, 2018), but more can still be done.

We recognise the progress made over past decades through the development of different schools of conservation thinking (Büscher et al., 2017; Mace, 2014; Rai et al., 2021; Sandbrook et al., 2019), multiple types of indigenous and community-based conservation areas (Brondizio et al., 2021; Corrigan et al., 2018; Dudley, 2008; ICCA Consortium, 2021), democratic and inclusive approaches to conservation (e.g. Oteros-Rozas et al., 2015; Rayne et al., 2020; Salomon et al., 2018; West & Aini, 2018) and multiple ways of valuing nature and our relationship with it (Chan et al., 2018; Gould et al., 2020). Furthermore, in some parts of the world, alternative colonial, non-colonial and post-colonial histories have occurred, with conservation movements differing from those we write about here (Adams, 2004; Guha, 2002). Yet, despite this progress and differing histories, protectionist approaches which separate people and nature continue to be taught and promoted and uneven power dynamics remain. We acknowledge that our perspective, and this summary, is limited, influenced by our experiences and past learnings, and situated in Western scientific thinking and culture. Conservation science is an ever-evolving, multidisciplinary and interdisciplinary field. We cannot, nor do we intend to represent all its complexities and the progress made to date. However, we hope that by summarising this common discourse and its relationship to the conservation science field, we highlight how history has created a complex web of power dynamics that continues to influence how conservation is carried out today. Based on our experience and that of peers, our focus here is to highlight potential changes which might support other ECRs to bridge gaps in knowledge, education and training which make dealing with these complexities more difficult.

1.2 | Reflections of early-career researchers

As ECRs who mostly followed 'traditional' career paths via the environmental sciences into the field of conservation, reflection, introspection and our experiences carrying out post-graduate research have made us realise we need to better consider alternative values, epistemologies and solutions to the environmental problems we deal with. In particular, we feel we needed to critically evaluate the impact of our research more thoroughly, and be more mindful of the unintended consequences of our work and mere presence within the socio-ecological systems we work in. Conservation is inherently political, and all interventions and decisions are embedded within complex socio-ecological systems (Büscher & Fletcher, 2019; Robbins, 2019). Our lack of in-depth understanding of the historical and socio-political backgrounds of the places we work, as well as

the positions of power we hold within them, increases the chance of unethical and unjust approaches to conservation. While these aspects are widely taught and discussed in other fields, for example, human geography, anthropology and political ecology (Marijnen & Verweijen, 2016; Robbins, 2019; Sundberg, 2004), these considerations are not as commonly associated with biodiversity conservation approaches (Bennett et al., 2016; Trisos et al., 2021).

Our own experiences, echoed in discussions with peers, suggest key concepts and ethical considerations can be absent from conservation training (e.g. conservation's history and evolution, relational values, positionality, intersectionality, power dynamics, gatekeeping), leaving us under-prepared to tackle the extremely complex conservation challenges the world faces (Bennett et al., 2017; Catalano et al., 2019; Raatikainen et al., 2021; Williams et al., 2020). We acknowledge that this may not be the case across all conservation training, and that the design of conservation syllabi is a complex task. Nonetheless, a lack of awareness of these concepts can prevent a holistic understanding of conservation science's origins and positionality, and the diversity of human–nature relations. It can also restrict critical analysis of the way conservation is carried out. These gaps also hinder our ability to account for our own positionality, identify our role in tackling institutional racism and unethical practices, and ask important questions when approaching conservation decision-making: 'Do we know enough to understand the social, as well as ecological, impact of our work?' and 'Who is not in the room when designing conservation approaches and making policy recommendations?' Without wider engagement with other ways of considering and valuing nature and our relationship with it, or with fields outside the natural sciences, we are less able to critically evaluate the impact and success of our work. This learning and openness needs to be sought particularly by conservation organisations in UK, Europe and North America, as they hold a disproportionate amount of power in decision-making and influence conservation practice and policy (Dominguez & Luoma, 2020; Maas et al., 2021).

With many conservation challenges widely recognised as societal rather than biological issues (Bennett et al., 2016; Mascia et al., 2003), we believe conservationists could be better equipped to understand and address these complexities; improving ECR knowledge of these issues could help accelerate this (Clark, 2001). In the next section, we outline our ideas and suggestions on how this could be done. We recognise that we are not experts, and we may have missed important advances or theories from other disciplines that could help us on this journey. This article, and the experiences we discuss, is intended to encourage others to also seek out such literature and theories. We also acknowledge that this is a complex task. Much of what we suggest operates within the existing Western scientific framework and established procedures, which fails to give equal weight to non-academic knowledge. We realise we could go further in our coverage of themes of co-management, indigenous stewardship and participatory processes, and that inequalities of power run through local communities and processes too and need to be considered (Brondízio et al., 2021; Matarrita-Cascante et al., 2019; Oteros-Rozas et al., 2015; Rayne et al., 2020). However,

such a review is beyond the scope of the paper, and we have by no means set out to present a blueprint for inclusivity with this piece. Instead, we hope that by prompting this conversation from within the conservation community, and by practicing reflexivity and humility, we can start to lay the foundations upon which fairer and more inclusive conservation practice can be built.

2 | MOVING FORWARD: IDEAS FOR MAKING CONSERVATION FAIRER IN TEACHING AND PRACTICE

As ECRs working in conservation science, we believe we have a responsibility to fully understand the history of our field, acknowledge the social impact of our work, and the position of power Western values, conservation organisations and research centres hold. We ought to be equipped with knowledge and skills that help us appreciate conservation's evolving nature, be mindful of how we want to shape its future, and identify uneven power dynamics and unethical practices so we can work towards fairer and more inclusive conservation practice as we progress in our careers. Here, we present our ECR vision for how we can start to do this and pave the way towards a fairer conservation sector (Figure 1).

We acknowledge once again that we ourselves are not experts in this area and may have missed examples of where things are already being done well or where progress has been made. Our suggestions are primarily aimed at conservation ECRs who have been trained in the natural sciences (Figure 2). However, we hope to also reach those who teach, mentor and supervise so that students and ECRs are better prepared for the multi-dimensional challenges conservation entails. Ultimately, we hope all segments of the conservation science community can benefit from considering these suggestions, and the reflections and discussions that they might provoke. With this in mind, we present an online hub (www.fairerconservation.wordpress.com), which we hope provides the start of such a space, and welcome feedback.

2.1 | Change the conversation

Based on our explorations and reflections, we believe that understanding the influence of conservation's history on current practices and opinions is essential to drive cultural change and critical analysis within the sector. More of these conversations need to happen within our scientific communities.

The Black Lives Matter movement has prompted important conversations and recognition of past failures within ecology and conservation (Cronin et al., 2021; Nature Ecology & Evolution, 2020a; Schell et al., 2020; Subbaraman, 2020; Trisos et al., 2021). We encourage ECRs to continue such conversations within their departments and create a culture in which the implications of the field's history, unequal power dynamics and unethical practices within the sector can be discussed. For example, by organising events or focus



FIGURE 1 Our ECR vision for a fairer conservation sector

groups, or introducing these topics into research group meetings. Over the past year, we have found that creating a focused discussion group has been valuable in initiating discussions among ECRs, students and staff; this has created a safe space for us to reflect on our own biases, discuss adaptations to our own research and uncover how much we need to learn about these issues. More broadly, we all need to be open to reconsidering our own strategies, and practise conservation with humility (Koch, 2019). This requires us to be honest about our past approaches and how they might have been wrong (Koch, 2019; Tollefson, 2019). In a discipline where proving your 'impact' is increasingly required, or where being seen as an 'expert' is critical for career development, this can be difficult to do. However, we need to be open to re-learn, 'un-learn' and maintain an openness to changing our minds (Koch, 2019). This begins with introspection, and some organisations have already started this journey (e.g. the Royal Botanical Gardens Kew, the Wildlife Conservation Society and the London Natural History Museum; more information is included at fairerconservation.wordpress.com). As ECRs, we should practise

self-reflection and deep-learning, and encourage our institutions to do the same.

2.2 | Encourage holistic education and collaboration

In our collective experience as students and ECRs, we have experienced the under-representation of conservation's historical and social context in conservation science education (Slater, 2021). Furthermore, our education sits within a 'Western science' framework, but we are not taught that this is just *one* way of understanding the natural world and our relationship with it; knowledge, values and beliefs originating in the Global South, or from other disciplines, are rarely considered or taught. This limits the opportunities to appreciate and learn from the true cultural, social and geographic diversity of the field (Deshmukh, 2017; Stevenson et al., 2018). Authors and researchers from ethnic minorities, women and other



FIGURE 2 Suggestions of ways ECRs can adopt and/or promote fairer conservation practices

marginalised groups in society continue to be under-represented in conservation science and ecology journals (Maas et al., 2021), reinforcing structural bias that may translate into teaching and education. Furthermore, despite conservation work often involving fieldwork and collaborations with people from diverse cultures and countries, important concepts such as researcher positionality, power dynamics and environmental justice are largely missing from our training, and evidence suggests this is the case across the field (Gardner, 2020). This is compounded by a lack of training on the history of the Western scientific method and its limitations, and a lack of reflexivity on conservation approaches from within the sector (Brookfield, 1995; Shobrook, 2016).

More diverse teaching, with a focus on alternative knowledge systems and approaches from other disciplines, could therefore help to move beyond the traditional conservation model, and start to break down the colonial influence and uneven power dynamics that remain

prevalent in many parts of the world (Downey et al., 2021). This does not mean forsaking the science and conservation expertise developed over centuries, but it requires the integration of diverse knowledge into the foundations of a fairer and more equitable field. This could be done without making substantial amendments to existing curricula (and overloading already stretched teaching staff) by, for example, adding introductory or guest lectures that cover the field's history and founding philosophies, as well as highlighting sources and case studies from other disciplines, indigenous communities and grassroots movements tackling environmental issues in other parts of the world (e.g. Indigenous Environmental Network, Hutakara Yanomami Association, Worldwide Indigenous Science Network, Mātauranga Māori, NIWA—Te Kūwaha; see fairerconservation.wordpress.com for more information). As universities work towards widening the concepts, values and approaches taught, existing theories and examples in the literature can help guide this process; for example, Standpoint

Theory (Stapleton, 2020), Privilege as Practice Framework (Kolan & Twotrees, 2014), Intersectionality (Atewologun, 2018), and Critical Race and Ethnic Studies (Delgado & Stefancic, 2001).

We appreciate that not all ECRs will be in a position to adopt these suggestions, but we can advocate for them, and help others within our academic departments to adopt them (e.g. by helping to organise guest lectures on key theories and histories we need to be aware of, encouraging others to learn and consider the social-political and cultural context of their study sites, or sharing useful resources). We also acknowledge the difficulties of interdisciplinarity (Pooley, 2013; Pooley et al., 2014), and are not advocating for everyone to master numerous disciplines. Instead, we believe that as a minimum, conservationists should be culturally competent and mindful of alternative approaches; an awareness and understanding of key theories and relevant frameworks from other disciplines could help achieve this.

Some institutions across the UK and elsewhere have already started to review their curriculums (e.g. Keele University, 2018, 2021; University of Sussex, 2021), with some focusing specifically on ecology and conservation biology (Liverpool John Moores University, 2022; The University of British Columbia, 2019; The University of Sheffield, 2021). At the individual level, we must strive to be more open to new training opportunities and theories, and critically analyse our methodologies and approaches to conservation solutions. To do this, we need to listen deeply to others, and be more open to seek interpretation and opinion from different fields to better ensure social, political and ethical dimensions are adequately considered. We challenge researchers of all levels to promote greater awareness of alternative value systems and voices within research groups and departments and incorporate such knowledge into teaching or group discussions. Our education never ends, and whether we are in the classroom or out in the field, the responsibility to move beyond colonial conservation rests with us regardless of career stage.

We note that our suggestions operate mainly within existing Higher Education and University systems; for true learning and representation of voices beyond these environments, it is essential that education and collaboration happen outside of these spaces. Collaborations should be actively sought with scholars from different disciplines who can supplement knowledge gaps, but also with local organisations, indigenous and local communities. Mutual capacity building should be adopted by both local and non-local collaborators to promote two-way learning (West & Aini, 2018), in place of one-way capacity building that is often delivered by Western scientists and practitioners. We have much to learn from local stakeholders and partners, who hold extensive and valuable knowledge of their local systems that is often unavailable from elsewhere (Berkes et al., 2000; Berkes & Turner, 2006; Duchelle et al., 2009; West & Aini, 2018).

2.3 | Promote ethical codes of conduct

In our experience as ECRs, we have often felt underprepared to effectively engage in ethically sound research or conservation practice. In practical terms, we see a lack of adequate standards and guidelines for

the ethical review and approval of conservation work involving human participants across much of the UK conservation and academic sector. At present, many conservation ethical review processes are targeted towards research working with animals, rather than working with people (Minteer & Collins, 2005), and are primarily bureaucratic, used as a tick-box exercise to protect institutions (Brittain et al., 2020).

We echo Brittain et al. (2020) in calling for review processes to go beyond ethical review boards towards more holistic ethical practices that protect the safety and dignity of participants, local people and researchers, for example by exploring the history and socio-political context of study sites, reflecting on research positionality, avoiding 'helicopter research' (Pettorelli et al., 2021), and ensuring that appropriate acknowledgement is given to in-country collaborators through co-authorship (Brittain et al., 2020; Sarna-Wojcicki et al., 2017). Such changes to ethical practices would promote sensitive and appropriate conduct and the co-production of knowledge, allowing for research outcomes to be more impactful. As the next generation of conservation practitioners and researchers, we have a responsibility to recognise the implications of this lack of training and awareness and call for improvements from our organisations. We can also lead by example by ensuring that our research projects follow strict ethical standards and advocate for these considerations to be integrated into formalised ethical codes of conservation conduct (in line with existing guidelines on research integrity, for example, The Concordat to Support Research Integrity (Universities UK, 2019). The following frameworks and guidance could help with this, and guide individual researchers on how to integrate ethical codes of conduct into their project cycles: IUCN's Environment and Social Management System (IUCN, 2016), Conservation Initiative on Human Rights (CIHR, 2021) and International Society for Environmental Ethics (ISEE, 2021). Such codes of conduct should be considered throughout the research process, rather than being seen as a step prior to data collection (which, in our experience, is when ethical review processes typically happen). ECRs can help encourage this by ensuring these considerations are thought about at the project proposal stage and advocate for sufficient time to be allocated within work schedules to accommodate the adoption of such codes of conduct. We also urge ECRs to ask their institutions for mandatory ethics training, in the same way that first aid training is seen as a prerequisite to field work.

Furthermore, the creation of informal, open environments and online forums could help researchers seek ethical support and guidance (e.g. NAAEE, 2021), and share experiences. We hope our online hub (fairerconservation.wordpress.com) will be a platform for learning and mutual support.

2.4 | Learn and normalise inclusive approaches to conservation

Conservation problems are context specific and require consideration by different people and value systems (Zafra-Calvo et al., 2020). While a growing body of conservation research recognises these diverse values (Chan et al., 2016, 2018; Pascual et al., 2017; West

& Aini, 2018), many agree there is still a need for transformative change (Matulis & Moyer, 2017; Wheeler et al., 2020; Zafra-Calvo et al., 2020). Such change can start at the individual level by recognising how our culture, educational experiences and institutions have shaped our own values, understanding of human–environment relations, and the way we frame conservation problems.

Methods that are values focused and emphasise the incorporation of local and indigenous knowledge and perspectives already exist and can help normalise the integration of diverse values in conservation decision-making (Bennett et al., 2017; Hicks et al., 2016; Mukherjee et al., 2019; Rayne et al., 2020). These can be used alongside approaches which facilitate the representation and participation of diverse voices to emphasise shared learning, transparency and co-development of conservation actions with local actors (Artelle et al., 2018; McMurdo Hamilton et al., 2020). Examples of such approaches include structured decision-making (Gregory et al., 2012; Runge et al., 2011), participatory processes (Collier-Robinson et al., 2019; Stoate et al., 2019), participatory scenario planning (Mistry & Shaw, 2021; Oteros-Rozas et al., 2015; Waylen et al., 2015), community-led conservation (Hajjar et al., 2020), incorporation of relational values in policy-making and practice (Chan et al., 2016, 2018; Pascual et al., 2021; Riechers et al., 2021) and rights-based approaches (Greiber et al., 2009). These tools can complement approaches from the fields of ecology and natural science to promote the co-development of knowledge, and ensure research and interventions are locally relevant, accepted and serve community needs (McMurdo Hamilton et al., 2020; West & Aini, 2018).

If we do not already have the necessary skills to implement such methods, we can still promote more inclusive approaches by choosing to collaborate with people from different disciplines, or programmes that incorporate interdisciplinary methods, and by ensuring we have considered and included the values and perspectives of local stakeholders. There are many examples of work, insights and leaders from non-traditional backgrounds (e.g. the Indigenous Peoples' & Community Conserved Territories & Areas Consortium (ICCA Consortium, 2021) and the Community Leaders Network, a collaborative grouping of rural representatives from Angola, Botswana, Malawi, Mozambique, Namibia, South Africa, Tanzania, Zambia and Zimbabwe (Resource Africa, 2020)). For a more complete (non-exhaustive) list, please see www.fairerconservation.wordpress.com.

3 | CONCLUSION

As ECRs still trying to define our roles in the field of conservation science and exploring how we can best conduct ourselves within the sector, recent introspection has led us to realise that there is still a lack of awareness around many issues, such as the influence of colonialism, unequal power dynamics and unethical practices. Conservation as a discipline excels at advocating for the protection of biodiversity, but paradoxically we often fail to protect and promote diversity and diverse values within our own field. We believe that the links between colonialism and conservation, and the continuing inequalities in the sector,

require greater attention. We are at a pivotal point in tackling the climate and ecological crises, and we can no longer disregard the importance of representing all people and voices when creating solutions.

As we continue to miss many biodiversity targets (Díaz et al., 2019; Nature, 2020; Tittensor et al., 2014), we echo others in calling for a change in our approach and understanding of conservation science (Chaudhury & Colla, 2020; Pascual et al., 2021; Zafra-Calvo et al., 2020). As ECRs, our values and understanding of the ecological and human components of ecosystems will shape our thinking, and the future of the field. It is therefore crucial that all of us involved in biodiversity conservation are mindful of the history, implications, and ethical components of our work, and approach conservation with humility and critical reflexivity. We would like to hear from other groups, local and international, about their ideas on how to catalyse such change. We hope that together we can create a fairer and more inclusive sector that promotes both the protection of biodiversity and the diversity of values and approaches involved in finding solutions.

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CONFLICT OF INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

AUTHORS' CONTRIBUTIONS

L.J.A., T.M.H., H.S.M. and Y.S.F. conceived the ideas; all authors contributed to the content and writing of this manuscript, contributed critically to the drafts and gave final approval for publication.

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