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People and Nature

GUEST EDITORIAL

Interdisciplinary and Transdisciplinary Research to Improve Treescapes for the Benefit of People and Nature

Understanding, expanding and sustaining UK treescapes: People, place and nature in a changing world

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Abstract

1. Expanding tree cover is central to addressing the interconnected challenges of climate change, biodiversity loss and societal well-being. However, achieving these ambitions requires a deeper understanding of where, how and why treescapes should expand and how they can be managed in ways that are environmentally sustainable, socially legitimate and resilient to future change. The UK Research and Innovation (UKRI) Future of UK Treescapes programme was established to address these challenges through interdisciplinary and transdisciplinary research.
2. This editorial introduces a Special Issue arising from the Future of UK Treescapes programme and reflects on the collective insights generated across its interdisciplinary and transdisciplinary research portfolio. The papers are synthesised around three interconnected themes that reflect the programme's ambitions: understanding and valuing UK treescapes, identifying pathways for expanding UK treescapes and building resilient treescape futures.
3. The papers demonstrate that treescapes are more than ecological systems or mechanisms for climate mitigation. They are socio-ecological landscapes shaped by interactions between environmental processes, cultural values, governance, history and lived experience. The contributions broaden understanding of the multiple values of treescapes, identify socially informed pathways for woodland expansion and explore how resilient treescapes depend upon both ecological integrity and societal responses to environmental change.
4. Taken together, the papers illustrate the value of integrating perspectives from the environmental sciences, social sciences and arts and humanities, alongside collaboration with policymakers, practitioners and communities. They demonstrate that understanding and managing treescapes requires recognising diverse forms of knowledge and navigating competing environmental, social and cultural priorities to support more resilient landscape futures.
5. The Special Issue argues that understanding, expanding and sustaining future treescapes depends on recognising the dynamic relationships between people, place and nature. By bringing together diverse disciplinary perspectives and

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knowledge communities, the Future of UK Treescapes programme demonstrates how integrated approaches can generate richer evidence to inform policy and practice for treescapes in a changing world.

KEYWORDS
resilience, socio-ecological resilience, transdisciplinarity, treescapes, woodland expansion

1 | INTRODUCTION

Expanding tree cover has become central to the UK's response to the intertwined challenges of climate change, biodiversity loss and societal well-being. Yet achieving these ambitions raises fundamental questions about where, how and why treescapes should expand and how this can be achieved in ways that are environmentally sustainable, socially acceptable and resilient to future change.

The Future of UK Treescapes Programme (Treescapes) was established to address these problems. It was a £15.7 million UK Research and Innovation (UKRI) programme that ran for 5 years between 2020 and 2025. Treescapes was funded by three UKRI research councils: the Natural Environment Research Council (NERC), the Economic and Social Research Council (ESRC) and the Arts and Humanities Research Council (AHRC); alongside support from the UK government Department for Environment Food & Rural Affairs (Defra), the Forestry Commission and the Scottish and Welsh Governments. It was established to provide evidence to support and inform the UK government's commitment to significantly expand tree cover in the UK as part of its Net Zero by 2050 strategy. As one of the least wooded countries in Europe, the UK government committed to a target of 30,000 hectares of new tree planting annually, totalling 1.5 million hectares by 2050 (Committee on Climate Change, 2020). However, while trees and woodlands are recognised as central to achieving net zero and nature recovery ambitions, significant uncertainties remain about where and how treescapes should expand to maximise environmental, biodiversity, social and cultural benefits while remaining resilient to a changing climate. Decisions about what to plant, where to plant it and how expansion can be achieved in socially acceptable and environmentally sustainable ways require robust evidence to inform policy and practice.

To address these gaps, the Future of UK Treescapes programme funded research projects across three distinct themes. The first sought to improve understanding of how treescapes function ecologically, socially and culturally, and how these values may change under future environmental and societal pressures. The second theme sought to provide evidence and insights on how a deeper understanding of human–nature relationships can inform culturally sensitive treescape expansion, and how expansion may affect the cultural and societal values associated with trees. The third theme considered which social and cultural values relating to treescapes are at risk from global change, and how understanding human responses to past change can inform adaptation to future treescape change.

The programme was premised on the assumption that addressing these socio-ecological challenges requires input from actors beyond academia, including policy and decision makers, practitioners, industry, communities and wider publics. This inclusion of diverse perspectives can improve the legitimacy, quality and relevance of research leading to improved utilisation of the results and impact (Vañó-Agulló et al., 2025). The programme, therefore, encouraged projects to work across multiple disciplines (i.e. interdisciplinarity) and in partnership with a range of practice and policy organisations and knowledge communities (i.e. transdisciplinarity).

Through its 17 research projects and 9 research fellowships, the Treescapes programme brought together 250 researchers across 42 universities and research institutions and at least 83 policy, practice and community partners. The programme was coordinated by a programme ambassador (Urquhart) and programme manager (Goodenough) who supported the programme to bring researchers into dialogue with the end users of the research, facilitated knowledge exchange across the programme and embedded inter- and transdisciplinarity across the programme community. For instance, each project or fellowship was required to collaborate with a policy or practice partner, such as policy makers or practitioners in forestry and related fields. The aim was to ensure that all research and outputs from the programme had real-world application and addressed challenges identified by policy or practice needs.

Alongside the focus on the programme enabling strong engagement between researchers, policymakers and practitioners, Treescapes also encouraged interdisciplinary collaboration across research disciplinary boundaries. Traditionally, research on forests and trees has been the realm of forest science, ecology, biology, bioscience, economics and, more recently, social sciences. Insights and approaches from the arts and humanities have been limited. To ensure engagement from across a wide range of disciplines, all projects were required to involve collaboration between researchers representing the disciplinary interests of the funding research councils (i.e. environmental science, social science and economics and the arts and humanities). As a result, just over 40% of the Treescapes researchers were applying their disciplinary expertise to treescape research for the first time (Urquhart et al., 2025).

The papers in this Special Issue broadly reflect the three core research themes of the Future of UK Treescapes programme. Collectively, however, they also demonstrate how these themes are deeply interconnected. They demonstrate that treescapes are not simply ecological systems, carbon stores or mechanisms for climate mitigation. They are socially negotiated, historically

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constituted and emotionally lived landscapes. The papers demonstrate that creating future treescapes is not simply a question of where trees should be planted, but of how societies negotiate relationships between people, place and nature in the face of environmental change.

2 | INTRODUCING THE SPECIAL ISSUE PAPERS

Across diverse methodological, disciplinary and geographical contexts, the contributions reveal how treescape creation and management are shaped by questions of governance, identity, participation, memory, well-being and justice. They challenge narrowly technocratic framings of tree planting and instead position treescapes as socio-ecological futures that must be understood through multiple forms of knowledge and experience.

A central contribution of the Special Issue is its demonstration of how transdisciplinary approaches can help address the complexity and contested nature of environmental change. While the papers draw on a wide range of disciplines including ecology, geography, behavioural science, education, landscape history, atmospheric science and the creative arts, their contribution extends beyond interdisciplinarity alone. Many papers explicitly engage with policy and practice actors in shaping research questions, methods and outcomes, including policymakers, land managers, farmers, communities, artists, children and young people. Several contributions also demonstrate the value of integrating forms of knowledge often marginalised within environmental governance, including local knowledge, lived experience, emotional attachment, memory and storytelling. The value of these approaches lies in what they reveal for particular decisions: whose priorities shape expansion, which trade-offs become visible, and how local experience can inform management.

2.1 | Understanding and valuing treescapes

The first group of papers expands our understanding of treescapes by exploring their historical development, ecological functions, cultural meanings and contributions to people's lives and well-being. Collectively, these papers demonstrate that decisions surrounding woodland expansion and landscape change are deeply entangled with questions of identity, attachment, governance, livelihoods and historical memory. Rather than presenting tree planting as a straightforward response to climate change and biodiversity loss, they reveal the complexity of negotiating different values, aspirations and understandings of what future treescapes should become. Pillatt and Smith (2026) use a novel computer vision method and historical Ordnance Survey mapping to reconstruct past treescapes, illustrating how digital methods and landscape history can challenge assumptions about historically 'natural' landscapes and inform contemporary restoration debates. Carlisle et al. (2016) similarly foreground the importance of place attachment and emotional and historical relationships with landscapes in shaping public attitudes towards tree planting and net zero transitions. Both papers demonstrate that contemporary debates about woodland expansion are shaped not only by future environmental ambitions, but also by how landscapes are remembered, experienced and valued.

Two contributions focus on broadening participation in knowledge production by recognising voices and forms of knowledge that have traditionally been underrepresented within environmental decision-making. Carr et al. (2026) foreground the perspectives of children and young people within urban treescapes, demonstrating how their experiences reveal distinctive relational and experiential understandings of urban nature that are often overlooked in planning processes. Greenwood et al. (2026) similarly show how storytelling, participatory mapping and community engagement reveal local knowledge, emotional attachment and place-based values that are often marginalised within conventional approaches to woodland creation. Both papers demonstrate how broadening participation can generate richer understandings of the diverse ways in which people experience, value and interact with treescapes.

Several papers provide new evidence of the tangible benefits that treescapes can bring to human health and well-being. Parker et al. (2026) demonstrate how urban tree cover can moderate thermal conditions in temperate cities, highlighting the contribution of treescapes to climate adaptation and human comfort. Alcock et al. (2026) further explore associations between treescapes, well-being and psychological distress, adding to growing evidence that access to trees and woodlands can support mental health and emotional well-being. These papers strengthen the case for considering human well-being alongside biodiversity recovery and climate mitigation within woodland and urban greening strategies.

Collectively, these papers argue for an understanding of treescapes as dynamic socio-ecological futures, where successful landscape change depends not only on ecological evidence but also on recognising the histories, identities and aspirations that shape people's relationships with place. They demonstrate that treescape expansion is neither socially nor politically neutral. Decisions about where trees should be planted, which landscapes should change and whose priorities should shape those changes involve negotiating competing environmental, cultural and economic values.

2.2 | Expanding treescapes: Negotiating pathways for change

A second theme emerging across the Special Issue concerns the diverse forms of knowledge required to understand and shape the expansion of future treescapes. These papers argue that decisions about woodland creation, management and restoration cannot rely solely on scientific evidence, but must also draw upon the experiences, values and expertise of the people who live, work and interact with treescapes. Through approaches ranging from

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participatory research and co-design to storytelling and creative practice, the papers illustrate how different ways of knowing can deepen understanding of landscape change and support more inclusive approaches to environmental planning and governance.

Several papers explore how different actors imagine and value future treescapes in contrasting ways, revealing the inevitable trade-offs associated with landscape change. Using participatory scenario planning, Minter et al. (2026) explore the synergies and trade-offs associated with alternative upland futures. Their work highlights the tensions between climate mitigation, biodiversity recovery, agricultural production and cultural landscapes, illustrating how woodland expansion is shaped by differing social values, land-use priorities and understandings of desirable rural futures.

Mvula et al. (2026) examine farmers' attitudes towards tree planting in Scotland, demonstrating how decisions are shaped not only by economic considerations, but also by social norms, knowledge, trust and perceptions of land stewardship. Similarly, Hood et al. (2026) identify barriers to agroforestry adoption and show how co-design approaches can develop learning resources that are better aligned with the needs of farmers and land managers. Rather than assuming that knowledge simply flows from researchers to practitioners, the paper highlights the importance of dialogue and reciprocal learning in supporting land-use change.

Greenwood et al. also argue that successful woodland creation depends upon recognising community knowledge, emotional attachment and local values alongside technical expertise. By combining storytelling with participatory mapping, they show how creative methods can uncover the lived experiences and cultural meanings that shape people's relationships with woods and trees, providing richer evidence to inform future woodland creation.

These papers argue for a broader understanding of what constitutes evidence in environmental research and practice. They demonstrate that understanding treescapes requires bringing together scientific evidence with local experience, creative practice, professional expertise and lived experience. In doing so, they illustrate that more inclusive approaches to knowledge production can generate richer understandings of landscape change and support decisions that are more responsive to the diverse relationships people have with trees and woodlands.

2.3 | Building resilient treescape futures

The final thematic grouping explores the many ways in which society responds and adapts to emerging treescape challenges and uncertainties. Cini et al. (2026) examine one of the most immediate ecological threats to woodland expansion resilience– the management of wild deer populations. Their findings demonstrate that ecological resilience depends not only on biological processes but also on public values, perceptions of wildlife and the social acceptability of different management interventions.

Clive et al. (2026) approach resilience from a different perspective, exploring how creative practice can help people engage with uncertainty, adaptation and the emotional dimensions of environmental change. Their collaboration between forestry and theatre demonstrates that building resilient treescapes requires not only technical solutions but also new ways of imagining and responding to uncertain futures. Their work illustrates how creative practice can complement conventional scientific approaches by creating opportunities for reflection, discussion and collective sense-making around complex environmental challenges.

Taken together, these two contributions argue that resilient treescapes cannot be achieved through technical interventions alone. They require adaptive governance, socially acceptable management and opportunities for people to engage with uncertainty and change. By recognising resilience as a dynamic interaction between ecological processes and human responses, the papers offer new perspectives on how UK treescapes can be sustained in an increasingly uncertain future.

3 | CONCLUSIONS

The papers in this Special Issue demonstrate the breadth of research generated through the Future of UK Treescapes programme, reflecting its original ambitions to improve understanding of treescapes, identify pathways for their expansion and strengthen their resilience in the face of global change. Across these themes, three broader insights emerge. First, the papers consistently demonstrate that treescapes are socio-ecological systems, shaped as much by people's values, histories and relationships with place as by ecological processes. Second, they show that understanding and managing treescapes requires drawing together diverse forms of knowledge, from ecological science and landscape history to community experience, creative practice and lived experience. Finally, the collection highlights that future treescapes will be shaped through the negotiation of competing environmental, social and cultural priorities, rather than through technical solutions alone.

One of the key strengths of the programme was the range of innovative methods such as computer visioning, participatory scenarios, theatre and storytelling applied alongside natural science methods such as ecological modelling or epigenetics. This enabled inclusion of actors often absent from forestry research, including children and young people, as well as recognising the importance of lived experience alongside ecological understanding.

As governments seek to expand tree cover to address the intertwined challenges of climate change, biodiversity loss and societal well-being, there is a growing need for research that recognises treescapes as more than carbon stores or ecological assets. The Future of UK Treescapes programme demonstrates the value of bringing together diverse forms of expertise to understand how treescapes are experienced, valued and governed. Future research will need to continue building these connections, ensuring that treescape expansion is not only ecologically effective but also socially legitimate, culturally meaningful and resilient in an uncertain future.

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AUTHOR CONTRIBUTIONS

Julie Urquhart and Alice Goodenough jointly conceptualised the Special Issue. Julie Urquhart, Alice Goodenough, Deirdre Heddon and Gill Tavner served as Guest Editors for the Special Issue. Julie Urquhart coordinated the peer-review process for the included manuscripts and led the writing of the manuscript. Alice Goodenough, Deirdre Heddon and Gill Tavner contributed critically to the drafts and gave approval for submission.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

This manuscript does not use data.

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