

The Biodiversity Crisis – Planning for Nature Recovery?

Edited by Mark Scott and Gavin Parker

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INTERFACE



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The Biodiversity Crisis and Emerging Roles for Planning

Mark Scott^a and Gavin Parker^b

^aSchool of Architecture, Planning & Environmental Policy, University College Dublin, Dublin, Ireland;

^bDepartment of Real Estate and Planning, University of Reading, Reading, UK

Biodiversity – the diversity within species, between species and of ecosystems – is declining faster than at any time in human history. As reported in the most recent global assessment report on biodiversity and ecosystem services (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [IPBES], 2019), nature and its vital contributions to people are deteriorating worldwide. The assessment is that 25% of species in assessed animal and plant groups are threatened with extinction, with around one million species already facing extinction, many within decades. In the UK, for example, over 40% of wild species are in decline and 15% are facing extinction. It is axiomatic that biodiversity loss is not simply a narrow environmental issue, but also a human one. The degradation of our ecosystems and loss of ecosystem functions impact negatively on human existence and quality of life. Natural capital is not fully replaceable, with some benefits being irreplaceable (IPBES, 2019). This includes the critical role of nature in providing food, water and feed, energy, medicines and genetic resources. These are all materials fundamental to people's physical wellbeing, and in underpinning human health and wellbeing.

Across the globe, direct and indirect drivers of biodiversity loss and ecosystem degradation have accelerated during the last 50 years. As noted in various studies (e.g., Jaureguiberry et al., 2022), terrestrial and freshwater ecosystem and land-use change are identified as having the most negative consequences for nature, causing habitat loss and ecosystem decay (Chase et al., 2020). This includes land-use change related to agricultural expansion (often at the expense of biodiversity-rich habitats), urbanisation and an unprecedented expansion of infrastructures linked to growing consumption. Climate change is increasingly triggering further biodiversity loss, while the deterioration of ecosystem functions restricts our ability to harness nature to mitigate and adapt to further climate breakdown.

At a global level, the urgency of the biodiversity crisis was recently emphasised in the landmark UN Biodiversity Agreement adopted at COP15 in Montréal, December 2022. This agreement recognises the need for a whole-of-government and whole-of-society approach to address biodiversity loss, setting a headline target of protecting 30% of the Earth's lands, oceans, coastal areas and inland waters by 2030. The vision underpinning the Montréal agreement is that: "by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people" (United Nations [UN] 2022, p. 7).

Given the situation that prompts this rhetoric, what role should planning perform in relation to delivering on this global vision? Is it feasible for planning systems (many under-resourced and under-powered) to meaningfully address the biodiversity crisis? In many ways, 'mainstream planning' has yet to fully engage with the landmark Montréal agreement, at least to the same extent as similar assessments or agreements on climate change. However, and notably, the Montréal agreement identifies a clear role for spatial planning in maintaining, protecting, and restoring Earth's natural systems. For example, Target 1 within the agreement identifies the urgent need for *biodiversity-inclusive spatial planning* to address land-use change to bring the loss of areas of high biodiversity importance, including ecosystems of high ecological integrity,

close to zero by 2030, while respecting the rights of Indigenous peoples and local communities. Target 11 focuses on urban-scale issues, highlighting the need to ensure access to green and blue spaces in our cities and through planning actions that enhance biodiversity and ecological connectivity. These themes challenge more traditional planning approaches, which have tended to focus on nature preservation (maintenance) through an “islands of protection approach” (Owens & Cowell, 2011), shifting towards mainstreaming biodiversity into planning and towards an emphasis on connectivity, protection, restoration, rehabilitation and functions. The aim of this *Interface* is to explore methods and practices to mainstream nature recovery across our planning systems.

Many organisations have formally recognised a nature recovery crisis in the past few years, with declarations aligning to evidence that nature is in long term decline. The requirement to take action to reverse this has been set out in a number of policies, legislation or treaties across the world. The UN Sustainable Development Goals, for example, highlight a broad expanse of policy areas where planning can and does clearly play a role here, and nature is apparent across several of these, notably goals 11, 12 and 15, where life on land and climate change appear as the closest matches to our focus. Ongoing concern for biodiversity depletion brings into question the role of planning in tackling the nature recovery crisis. The aim here is to stimulate greater engagement of planning theory and practice with the collapse of biodiversity, as part of the widening agenda that sees planning systems, in at least some countries, tasked with addressing and enabling nature recovery.

Debates over the scope of planning and associated regulation have been long-running and continuous, particularly in an era of neoliberal governance. However, despite numerous attempts to deregulate, speed up, or otherwise denigrate spatial planning, the need to consider land use and environmental issues in an integrated and long-term fashion is as persistent as it appears common sensical. These issues span questions of location, quantum and quality of outcomes as well as resource prioritisation in a time when multi-functionality is being discussed but land is a limited resource with many calls being made on it. If anything, the issues and tasks presented to planning systems worldwide have expanded, creating a gap between need and scope for good planning on the one side, and inconsistent or weak political support and resourcing on the other. While these larger issues are not directly in focus here, they are important parts of the backdrop as possible barriers to effective planning for nature.

For us, concern over nature recovery and biodiversity strikes at the heart of what planning should be for; an endeavour that embraces careful stewardship of resources, appropriate location, type and design of development, sustainable land use, and long-term thinking. In this light, the set of *Interface* pieces set out here showcase instances and aspects where planning activity is already playing a role in considering and engaging with the task of nature recovery. Intermingled with existing and emerging progressive activity is a more critical edge; as such, the series of essays are also provocations, presented here as part of a wider set of arguments for progressive planning to tackle societal challenges in the long term. The very core of planning should be a concern for how land is used and how it functions, with recognition for the range of foundational benefits that land provides.

We consider that planning has a progressive role to play despite any gap in governance or present capacities. Land use planning can and should clearly play a major role in aiding nature recovery but what is actually happening and what innovations, as well as barriers exist to tackle this crisis? More broadly, how can nature recovery be complementary to other demands on land? In exploring positive action and generating supportive critique here, including questions regarding

what more can be done and how, the particular focus here is to consider what existing and new roles planning can play in addressing the biodiversity crisis, across a variety of tools and strategies, involving prevention, mitigation and adaptation of environments in both rural and urban spheres. Assessing these options and practices raises crosscutting questions of what conceptualisations, processes and regulation, including planning policy, are needed and can be effective in preventing damaging activity. How can greater attention be paid to opportunities for biodiverse land use and multifunctionality? For example, how can mandating for biodiversity realise progress to achieve a halt to decline or net increase in biodiversity? What spatial patterns of biodiversity need to be planned for and how can planning embrace multifunctionality or “stacked” land-uses, rather than historic tendencies to promote land use separation?

Multifunctionality is a key concept here, as recent influential reports (The Royal Society, 2023; House of Lords, 2022) have indicated, where “the concept of multifunctionality – the notion that land is a dynamic resource offering multiple simultaneous benefits, which can work in harmony with each other when utilised effectively” (House of Lords, 2022, p. 53) appears in congruence with effective land-use planning. The House of Lords report argued, with a variety of ecosystems services foremost in mind, that “Multifunctionality does not eliminate trade-offs or potential conflicts in land use, but it makes clear that the recent priorities accorded to nature recovery and carbon sequestration, among other uses, need not be to the wholesale detriment of food production” (House of Lords, 2022, p. 53). We note that this presents a challenge for planning: to integrate and realise the potential of multifunctionality. This is likely to be particularly challenging given that markets tend to either reject or undervalue multi-benefits of land and landowners will see risk in tying themselves down to arrangements that compromise income streams.

The material covered in the *Interface* essays here stretch across and between the rural and urban with, including linkages where development proposals and development impacts on biodiversity in an urban site are offset by ostensible enhancements to biodiversity in a distant, possibly rural location. What we perceive is that planning for nature is becoming tied to *markets in nature* in the same way that in many countries planning is tied to property markets and is becoming servient to those needs. As such, appropriately smart regulation will be needed and, we might further argue that, an extension and strengthening of planning will be needed.

Together what these essays show is a range of planning activity that indicates the issues, role and practices that are now emerging across territories. These help show the progressive and important potentials of planning for nature, as well as to set up an agenda for research and practice across this topic area. We perceive an opportunity to reflect on planning tools and measures, existing approaches, resources, and support mechanisms to consider if they are fit for purpose – and to go beyond this to attempt to initiate greater learning across jurisdictions. Each contribution to the *Interface* includes both academic and practitioner/policy-maker co-authors. The value of this approach is to ensure that co-evolving theory *and* practice can challenge each other; it embodies a view that the potential of planning to address the biodiversity crisis must be rooted in the practicalities involved in terms of knowledge, tools and the capacity of planning systems to rise to the challenge.

In order to set this series of essays in train by discussing the biodiversity challenge globally, Meri Juntti, Joshua Castellino and Oscar Forero set out the scale and extent of the challenge with reference to the global challenges involved. They identify global aspirations for biodiversity conservation, specifically the so-called “30 by 30” target set out in the Global Biodiversity Framework, whereby by 2030 at least 30% of terrestrial and inland water areas, and marine and coastal areas, (especially areas of particular importance for biodiversity and ecosystem functions

and services), are effectively conserved. Within this context, Juntti et al. raise critical issues around how the “burden” of conservation is uneven. This raises justice concerns between and across Global South and Global North territories. The authors also call for a greater plurality of values and voices to be included in nature conservation, particularly Indigenous groups in biodiversity rich regions and how this also links to engagement with different knowledge systems.

The remaining contributions focus on national and local scale efforts to mainstream biodiversity into planning and land-use decision-making. These primarily explore planning systems in the Global North, recognising that biodiversity protection and recovery action must be delivered beyond biodiverse rich Global South regions. Firstly, Ian Mell and Gemma Jerome focus on the introduction of biodiversity net gain (BNG) in England and Wales. As outlined by Mell and Jerome, BNG seeks to foreground nature into development and planning decision-making to ensure that development does not decrease the quantity and quality of biodiversity, and to signal a shift from protection of nature to a *net-gain* emphasis. While integrating nature into planning decision-making is at face value laudable, Mell and Jerome highlight a number of practical limitations. These include the extent to which local planning authorities have the in-house expertise to evaluate net-gain proposals, resourcing constraints, and managing competing obligations within planning decision-making, particularly in the delivery of housing. The authors also highlight the ways in which the balance between on-site and off-site provision of net-gain can also be problematic. For example, this includes questions regarding legal responsibilities and enforcement when off-site solutions are sought, the influence of cost considerations amongst developers in terms on- or off-site provision, and questions of who benefits; an issue brought into relief if local residents experience biodiversity loss where net-gain provisions are located elsewhere.

These practical dimensions of mainstreaming biodiversity into planning are further explored by Marco Amati, Cris Hernandez, Chris Buntine and Amanda Dodd in relation to peri-urban areas in Victoria, Australia. In contrast to the BNG approach, the authors examine a more iterative, bottom-up example of planning with nature. Amati et al. explore the potential for biodiversity-inclusive local planning frameworks through pragmatic problem-solving between developers and local planners – in effect a learning-by-doing approach. However, the authors highlight similar institutional barriers to Mell and Jerome, including a lack of knowledge/skills, siloed actions, and time barriers in the form of planning performance impositions.

The paper by Iqbal Hamiduddin, Chris O'Brien and Helen Lucocq, goes on to explore broader issues of land management within a rural setting in Wales. Drawing on research and practitioner experiences of Bannau Brycheiniog (formerly the Brecon Beacons) National Park, Wales, the authors examine traditional siloes within land management issues set across planning, countryside management and agricultural domains. Hamiduddin et al. explore the tensions between competing land-use demands in a national park (e.g., farming, housing, recreation) and how new challenges such as converting farmland to forestry for carbon offsetting are emerging as a response to the monetisation of nature (in this case offsetting schemes). The case study explores examples of multifunctional land-uses that appear critical within a nature recovery framework—these include examples of regenerative farming, nature friendly farming and community-supported agriculture.

The next contribution returns to issues of knowledge and engagement through insights from Ireland's recent Citizen Assembly on Biodiversity. Mick Lennon explores Ireland's recent experiments with deliberative citizen assemblies to tackle complex and urgent policy and societal challenges. Lennon outlines the citizen assembly process and approach before going on to reflect on some of the key recommendations of the Assembly which include a potential

constitutional recognition for the rights of nature. Lennon suggests that this deliberative method helps overcome the politics of unsustainability, while also demonstrating how the public, with others, can co-produce complex and nuanced policy proposals.

In the final paper, Richard Blyth, Gavin Parker and Mark Scott reflect on the themes raised in the *Interface* and discuss how we can use and regulate land to promote a nature recovery, highlighting the challenges as well as importance of strategic and thoughtful land policy. While the *Interface* collection explores the biodiversity crisis and the planning response in specific spatial and environmental contexts, the concern with the capacity and capability of planning legal instruments, institutions, culture and specific frameworks or practices to address the biodiversity crisis is one that resonates across all contexts.

Notes on Contributors

Mark Scott is Professor and Dean in the School of Architecture, Planning & Environmental Policy, University College Dublin. His research is focused on the environmental and sustainability dimensions of spatial planning in both urban and rural environments. His recent research projects include work on rural planning, climate adaptation and land-use governance. He is currently Chair of the Irish Government's Technical Working Group for its National Land Use Review, and he is an editor of *Planning Theory & Practice*. Email: mark.scott@ucd.ie

Gavin Parker is Professor of Planning Studies in the Department of Real Estate and Planning at the University of Reading. He has a longstanding research interest in land use and conflict and was a co-author of the Rural Planning in the 2020s report for the RTPI and co-author of the Royal Society report on multifunctional landscapes. He was chair of the New Forest National Park Authority 2020–2023. Email: g.parker@reading.ac.uk

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The Global Biodiversity Challenge

Meri Juntti^a, Joshua Castellino^{b*} and Oscar Forero^c

^aDepartment of Law and Social Sciences, Middlesex University, Middlesex, UK; ^bMinority Rights Group International, London, UK; ^cCI Tibaitata Agrosavia, Cundinamarca, Colombia

*The views expressed in this article do not necessarily reflect those of Minority Rights Group International

Introduction – The Biodiversity Crisis

The crisis of biodiversity refers to the drastic global decline in species populations and diversity and the condition and extent of ecosystems over the past decades (Dasgupta, 2021; Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [IPBES], 2019). Despite long-standing international policy, mainly the *UN Convention on Biological Diversity* (CBD) established in the wake of the 1992 Rio Conference on sustainable development, we have now reached an extent of biodiversity loss, which places the Earth system outside a safe operating space (Folke et al., 2021). This means that the loss of species populations, genetic diversity and decline of ecosystems is now at such a level that it is seriously affecting the ability of ecosystems (including people) to respond to changing conditions and to tolerate shocks and perturbations while maintaining their present functions that sustain life on the planet.

In response to this crisis, the December 2022 15th Conference of the Parties to the CBD ratified the new *Kunming-Montréal Global Biodiversity Framework* (GBF). The GBF builds on the *Strategic Plan for Biodiversity 2011–2020* and shares four long-term goals with the *2050 Vision for Biodiversity* intended to give direction to the post 2020 policy. The 2050 Vision states as its main aim that “by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people” (UNEP/CBD, 2022 Section F). The GBF has 23 targets which aim to ensure that, among other things, “by 2030 at least 30 per cent of terrestrial and inland water areas, and of marine and coastal areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved” (UNEP/CBD, 2022 Target 3, also known as the 30 by 30 target). Together, the 23 targets set out a pathway to reducing the threats to and restoration of lost biodiversity, while meeting people’s needs. Sustainable use and benefit-sharing of relevant natural resources such as land, flora and fauna, is to be achieved through the establishment of robust tools and implementation solutions such as incentive structures and access to knowledge and technology. There is emphasis on participatory decision-making that pays particular attention to vulnerable groups and those, such as Indigenous people, whose livelihoods and well-being often depend directly on nature.

The primary argument underpinning the 30 by 30 target is that human activities have brought the planet to the brink of destruction, with biodiversity extinctions a key manifestation of this ecological crisis. It is therefore imperative that, in conjunction with other measures, a protective ring is thrown around the biodiversity that remains, to safeguard its disappearance. A part of the globe must return to wilderness, so that biodiversity can thrive while strengthening these areas’ abilities to also serve as carbon sinks to absorb carbon emissions from elsewhere (The Nature Conservancy, 2023).

The Politics of Biodiversity and its Metrics and Conservation

While urgency and legitimacy are at the forefront of the notion of crisis, they are not principles that can easily be met simultaneously (Kuipers, 2005). ‘Biodiversity crisis’ can be seen as an instrumental term harnessed to elicit a strong response to the scientific understanding and evidence accumulated over the past decades on the two major environmental issue areas of climate change and species extinction. But as with any global issue that implicates a vast range of contexts and people, it is crucial to ask questions regarding positionality and legitimacy in relation to both the notion of risk as well as the knowledge basis of risk definitions and the

proposed responses, including the GBF. There is a need to pay attention to environmental justice and, in particular, to the scope for representation and recognition of alternative perspectives, cultural rights, and knowledges in both defining the problem and in devising policy responses.

The Convention on Biodiversity aims to promote an integrated ecosystems-based approach to nature conservation, with the aim being, on one hand, to valorise nature in economic terms –highlighting its central role in providing services that are essential to society and our economic systems – and on the other, to better articulate, understand and manage instances of societal decision-making where economic and environmental values are juxtaposed, often to the detriment of environmental outcomes. The ecosystem services approach has gained traction and has become robustly institutionalised (Bouwma et al. 2018). The UN-sponsored *Millennium Ecosystem Assessment* (MEA, 2005), the *Economics of Ecosystems and Biodiversity* (TEEB – an initiative to make nature’s value more ‘visible’) and the *Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (IPBES) serve as examples of this institutionalisation (Maes et al., 2016). In a global review, Dasgupta (2021, p. 19) observes that “there is a tension between our demand for provisioning services on the one hand and our need for regulating, maintenance, and cultural services on the other.” That is to say, how we engage with nature and derive benefits and goods from it is imbalanced. We extract too much and fail to protect the functions that support and regulate those provisioning services. But many also argue that the ecosystem services and benefits terminology itself masks complexity, particularly of the functions and values that nature is imbued with, and also by prescribing an anthropocentric world view dominated by Western science-based problem framings and solutions. While it does depict nature as a complex, interlinked entity, it frames nature essentially as a means to serve human needs, a limited conceptualisation. In this light, many call for a revision of not just the knowledge basis but the conceptual basis of conservation policy.

Recognising and Understanding the Plurality of Values and Engagements with Nature and Biodiversity in Conservation

Openness to the plurality of values and knowledges is beginning to be recognised as important because of the crucial role of Indigenous peoples in biodiversity conservation (Nitah, 2021). Approximately 80% of the remaining biodiversity globally is situated on Indigenous lands (Garnett et al., 2018). There is significant overlap between Indigenous peoples’ ancestral domains and the areas selected to fall under the 30 by 30 conservation target because these areas are often richest in biodiversity. By and large, Indigenous peoples have proven to manage their territories in ways that ensure conservation of biodiversity, preservation of their livelihoods and cultural reproduction. Indigenous peoples’ struggle to maintain or regain autonomy in the management of their territories has often implied opposition to the commodification of nature. Indigenous lands are biodiversity rich *because* of the presence of Indigenous people there (Reyes-García et al., 2022). Indigenous peoples have decisively opposed any notion of nature as separated from humans or as devoid of agency. The knowledge systems and practices of Indigenous peoples therefore place them in a key position in the search for solutions to the biodiversity crisis.

From a legal standpoint, the 30 by 30 target consists of non-enforceable standards impossible to contest through law. At worst, it will allow governments and forestry authorities to evict Indigenous peoples (Petersen, 2020). History indicates that this would be fundamentally counter-productive. For the 30 by 30 target to be effective and fair, it needs to be built upon consensus

with Indigenous peoples and derive lessons from the spirituality, cultural identity and livelihoods of the Indigenous peoples populating the areas that form the predominant target of the CBD.

During the last two decades, national authorities have made efforts to transform governance of protected areas, guided by the CBD and Nagoya Protocol (another of the CBD's subsidiaries), which pledge to support the development of sustainable Indigenous livelihoods, as well as supranational conservation institutions (IUCN, WWF, Conservation International, etc.). These attempt to enhance the participation of civil society organisations, particularly of Indigenous peoples so that they can influence biodiversity conservation policy development and implementation. Canada can be seen as a pioneering country in this respect (Nitah, 2021). This shift has been influenced by the emerging scientific consensus that deems it nonsensical and contradictory to study ecosystems and social systems as separate realms. Political ecologies of the 20th century have rebuked notions of pristine environment and of wilderness as devoid from human interaction. But the driving force of this change in perspective has been the social mobilization especially amongst Indigenous peoples, without which supranational organizations and national governments would have not initiated the governance transformation for increased agency of civil society organization in biodiversity conservation policy development and implementation.

There have been attempts at a more meaningful knowledge exchange between traditional and scientific knowledge. Previous antagonisms stemming from environmental managers towards the Indigenous traditional authorities they came across who they viewed as competing to influence biodiversity conservation policy appears to be waning. Trade-offs have been negotiated to forge alliances that confront larger threats emanating from extractive industries including mining and logging. There have been agreed-upon curbs on illegal trade of wildlife and narcotics, while negotiation is ongoing to curtail the expansion of industrial agriculture when it occurs against potential backdrops of Indigenous livelihoods and the environment. Indigenous peoples have advocated to consolidate this progress in a move to a post-development framework where both Indigenous and scientific epistemic cultures inform the socioecological transformation required for preserving life supporting systems (Escobar, 2015).

But alliances between the environmental and Indigenous movements to advance biodiversity conservation and implementation of human rights of Indigenous peoples have not always worked out. A central feature lies in the reluctance from national governments to recognise Indigenous peoples' right to self-determination and their authority to manage the natural resource in their territories (Forero, 2015). While this approach pays greater attention to Indigenous values, it nonetheless stems from an anthropocentric view of nature as, essentially, a commodity for human use. It is therefore unsurprising that many term the Nagoya Protocol to be a failed agreement. Reports of projects involving co-management of protected areas by conservation and Indigenous authorities highlight the institutional and cultural barriers to reaching conservation targets and full implementation of the rights of Indigenous peoples simultaneously.

From the perspective of many Indigenous communities the 30 by 30 target, or Fortress Conservation as they often refer to it, remains no more than a continuation of incremental and insufficient change and in effect, modern day colonisation. Many fear that the biodiversity crisis and climate breakdown provide fresh impetus for the displacement of Indigenous communities and a corrosion of their land rights (Brockington et al., 2012). The 30 by 30 target should not be forcibly implemented but must have the free prior informed consent of the Indigenous peoples who reside within the target zones. In those circumstances where such consent has been gained, it is crucial that conservation designations are driven and designed by Indigenous

peoples drawing on traditional knowledge, and implemented in a manner that recognises and delivers on Indigenous rights and respects Indigenous cultures and livelihoods. Relying on traditional practices that are local and specific to each target area is far more likely to yield results than lab generated *one-size-fit-all* solutions that are not adequately mindful of terrain and local natural patterns.

Responsibilities and Burdens in Global Biodiversity Conservation

The 2022 Global Biodiversity Framework's commitment to protecting 30% of the globe's land area by 2030 is among the most important changes that are necessary to combat the biodiversity crisis and climate change. Yet for it to be truly constructive it must be accompanied by equally grand, systemic changes involving the remaining 70% of the planet. This includes substantial restoration and curbing land-use change and a fundamental change in the anthropocentric mindset that the sole purpose of nature's existence is to generate wealth and growth. Without such a meaningful commitment, the decision to focus on 30% of the planet that is least implicated in biodiversity loss will simply be ineffective.

Enabling the 30 by 30 target will also require financing, which has to be drawn from those who benefitted most from the loss and damage that has occurred. The destruction of circular Indigenous economies has been accompanied by a significant transfer of resources and wealth far from sites of destruction to accumulate in OECD countries. The process of such exploitation must be recognised as unjust enrichment (Castellino, 2022), and attempts made to reclaim resources to support the restoration and conservation efforts and system change that is urgently needed. Finance mechanisms connecting Indigenous people and the corporate sector through practices such as biodiversity offsetting (Nitah, 2021) do not represent such a change but are aligned with the dominant anthropocentric conservation approach that subverts both nature's intrinsic value and cultural practices and knowledges that are at the heart of the perception of humans as a part of, not superior to, nature. Much remains to be done in developing a clearer articulation and protection of Indigenous people from displacement by commercial interests looking to profit from the opportunities posed by measures such as biodiversity off-setting markets.

Concluding Remarks

Persistent objection and intensive resistance to environmental destruction from the hegemonic extractive economic model has been voiced by Indigenous leaders over centuries. Where successful, this resistance has had a dramatic impact on biodiversity preservation in stark contrast to places where the resistance was broken through a combination of guns, germs, steel and subterfuge (Diamond, 1998). It is crucial that the global 30 by 30 target to preserve biodiversity does not pit one voiceless constituency, the environment, against another, Indigenous populations (Castellino, 2021). The now 'global' desire to protect an environment destroyed by wanton quests for profits that have accrued to very few, is not just morally dubious but will remain deeply ineffective, unless it is used to empower those whose territories it primarily concerns (O'Bryan, 2021). Moreover, the GBF targets protecting biodiversity can only have salience as part of a wider series of measures necessary for eliminating the most damaging human activities stemming from the search, discovery, and alienation of lands and biodiversity through extraction, commodification and profit-making. An exclusive focus on conservation areas may be no more than a distraction from the more obvious system change needed.

Notes on Contributors

Dr Meri Juntti is an Associate Professor of Environmental Governance at Middlesex University. Her research focuses on policies and planning instruments that further sustainable agriculture and sustainable rural development and, more recently, urban planning and nature's social impact in cities. Meri leads the MA Global Governance and Sustainable Development and co-leads the Sustainable Development Research Cluster. She holds an honorary position at UCL Bartlett School of Planning, and is a board member of The London Development Trust. Email: M.Juntti@mdx.ac.uk

Joshua Castellino is Co-Executive Director of *Minority Rights Group International* & Professor of International & Comparative Law at Derby University, UK. Previously founding Dean of the School of Law, Middlesex University London, UK, he holds visiting academic positions at the College of Europe (Poland), Oxford University (UK), and the Irish Centre for Human Rights (Ireland). He sits on governing boards of civil society organizations in the UK, Germany, the Netherlands, Uganda & Hungary, serving as Chair of Privacy International. Joshua worked as a journalist with The Indian Express Group in the 1990s, before winning a Chevening Scholarship and completing his PhD in International Law in 1998. He has published eight books and over a hundred articles on international law and human rights over 25 years in academia, including the *Minority Rights Series* published by Oxford University Press. Email: Joshua.Castellino@minorityrights.org

Oscar Forero is a researcher for the Colombian Corporation for Agricultural research AGROSAVIA, consultant Tutor of CeDEP SOAS, and a visiting lecturer at Centre of Alternative Technology in the UK. Dr Forero has been investigating the intersection of human rights, biodiversity conservation and sustainability advising policy development in the areas of natural resources management, sustainable development and in the implementation of peasant and Indigenous peoples' rights. His latest research and advocacy work relates to advising the development Territorial Innovation Systems with aim to increase socioecological resilience of livelihoods in the context of Anthropocene. Email: oforero@agrosavia.co

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Planning and Biodiversity Net Gain in the UK

Ian Mell^a  and Gemma Jerome^b

^aDepartment of Planning, Property & Environmental Management, School of Environment, Education & Development, University of Manchester, Manchester, UK; ^bBuilding with Nature, Gloucester, UK

With the passing into law of the Environment Act in 2021, the UK government set out an ambitious programme of legislation aimed at ensuring the long-term quality and functionality of the natural environment. A key pillar of the Act is set out in Section 14 (and subsection 7 A) via the presentation of Biodiversity Net Gain (BNG) legislation. BNG was developed to:

...contribute to the recovery of nature while developing land. It is making sure the habitat for wildlife is in a better state than it was before development.

(HM Government, 2021)¹

¹See also: [https://www.gov.uk/guidance/understanding-biodiversity-net-gain#:~:text=Biodiversity%20net%20gain%20\(%20BNG%20\)%20is,Planning%20Act%201990%2C%20unless%20exempt](https://www.gov.uk/guidance/understanding-biodiversity-net-gain#:~:text=Biodiversity%20net%20gain%20(%20BNG%20)%20is,Planning%20Act%201990%2C%20unless%20exempt) (accessed 23 August 2023).

Biodiversity Net Gain places a greater, and specifically a legal responsibility on land-owners, developers, and local government to ensure that development does not decrease the quantity or quality of biodiversity. It also shifts the emphasis of development from a 'no-net loss' to a 'net gain' perspective supporting enhancement in all cases (Simmonds et al., 2020). On-site increases of at least 10% to the baseline ecological condition need to be included in the design, planning approval, and the subsequent build-out phases of all development. In addition, enhancement of the condition of existing habitat should support an increase in the quantity of habitat. Consequently, BNG could be viewed as disincentivising poor quality construction that negatively impacts biodiversity, as developers will incur additional costs if they do not meet BNG standards (zu Ermgassen et al., 2021). The value of such an approach has been discussed by the Local Government Association (Planning Advisory Service, 2023a) who note that BNG:

...delivers measurable improvements for biodiversity by creating or enhancing habitats in association with development. Biodiversity net gain can be achieved on-site, off-site or through a combination of on-site and off-site measures.

The central tenet of BNG is therefore to foreground a consideration of ecological condition within planning discussions, and to locate 'nature' in a broad sense, as a core element of most development. BNG formally came into practice as a mandatory requirement in February 2024 for developments subject to the Town and Country Planning Act 1990 (unless exempt), and to small sites from April 2024. It could also be argued that although BNG is legally applicable only to England and Wales in the first instance, there are potential opportunities for comparable approaches to be legislated for in Northern Ireland and Scotland.

BNG is one of a suite of new policy, project, and legislative developments aiming to ensure that biodiversity quality, quantity and provision are maintained in light of the growing concerns regarding the environmental damage caused by development. The Environment Act itself, the National Green Infrastructure Standards Framework (NGISF), Local Nature Recovery Strategies (LNRS), along with the creation of the Office of Environmental Protection (OEP), and the increased emphasis placed on the use of the Taskforce on Nature-related Financial Disclosures (TNFD) Framework and Environment, Social and Government (ESG) focused strategies all complement BNG and thus squarely place biodiversity at the forefront of planning and development debates.

However, the expanded lexicon of terminology, policy, and legislation raises questions about the effective application of BNG (and other ecologically-focused laws) in practice. Developers and planners have been asked to engage in a substantial upskilling to ensure that they have the technical, thematic, and legislative expertise to plan for, and in the longer-term, deliver, the main aims of BNG. Concerns understandably remain regarding how BNG will be embedded within planning applications, how thoroughly developers will engage with the legislation, and how BNG will be managed by local planning authorities (LPAs) in terms of evaluation of the delivery, scale and evaluation of developments using an ecological impact assessment (EcIA) protocol – the Biodiversity Metric 4.0 (see for example zu Ermgassen et al., 2021). Worryingly, the ENDS Report (2019) suggests that approximately 75% of LPAs do not have the in-house expertise needed to effectively manage BNG.

Moreover, problems may also focus on whether the introduction of a quantitative metric-based target is too reductive. The Department of Environment, Food and Rural Affairs (Defra), for example, has called for such data-driven practices previously to streamline the subjectivity of environmental enhancement. Using a 10% enhancement of the baseline ecological position, a

clear pathway to planning approval has been set. However, a 10% enhancement may not ensure that quality and functionality for nature and society are delivered. The value of nature – as noted in the Natural England & Office of National Statistics (2019) access to nature survey and by Public Health England (2020) in their analysis of green space at the height of Covid-19 – illustrate that socio-cultural quality is of equal importance as the “quantity” of nature provided. Translating the appreciation of such socio-economic values of nature within the application of BNG may therefore present an operational dilemma for LPAs.

The lack of explicit ecological expertise in local planning authorities as a consequence of changes in local government staffing and funding (House of Commons – Environmental Audit Committee, 2021) is perhaps one of the most critical issues impacting upon the delivery of BNG. This is critical as LPAs will act as the responsible body for securing BNG through the planning process. This issue is two-fold. Firstly, there is an uneven distribution of knowledge and skills across LPAs. A 2022 survey conducted by the Association of Local Government Ecologists (ALGE) reported that 26% of LPAs do not have access to ecological expertise. In their subsequent report, “Survey of Local Planning Authorities and their Ability to Delivery Biodiversity Net Gain in England,” this was an even higher percentage (ALGE, 2022). ALGE highlighted several interlocking issues including current competence, understanding of the structures and instruments supporting the delivery BNG and LNRS proposals, as well as the additional capacity required to effectively deliver the proposed changes. These issues also relate to the lack of additional financial provision allocated to LPAs to deliver the programme of ecological enhancement.

The practicalities of BNG are significant, with LPAs taking on the responsibility of Department for Environment Food and Rural Affairs (Defra) obligations to review BNG plans for every planning application. They will also be responsible for quality assurance, audit, the 30-year monitoring period, and reporting back to Natural England. Questions focus on whether the current policy scaffolding put in place to deliver BNG is adequate to support the management of BNG in action. Where BNG will be delivered off-site, for example through a habitat banking, the burden on LPAs will be less, because a third party will administrate. But in cases where BNG will be delivered on-site, LPAs will be expected to manage whole process.

Whilst Defra have provided clear structural guidance for the delivery and management of BNG within the suite of nature-centric policies, there is limited certainty addressing key questions, including:

- What are the legal mechanisms for enforcement?
- Which body is legally liable for the gap in BNG skills and knowledge in the development and management sectors? Will management companies be responsible?
- Given the importance of robust and adaptive approaches to management, who signs off changes to BNG Plans over time? Who authorises deviation from and assures quality for site-level management plans, and do LPAs have the skills for this?
- Who will identify, allocate and monitor sites for compensation?

These questions, and others, raise a further issue regarding the benefits of BNG as the *primes inter pares* planning obligation. Knight-Lenihan (2020) frames this ‘onsite versus offsite’ issue both in terms of practicalities, and through highlighting the question of expediting delivery of benefits:

Therefore, local planning authorities will be balancing short- to medium-term economic benefits of supporting BNG against uncertain medium- to long-term ecological benefits. This may result in further

development with poor ecological outcomes. The lack of certainty may be balanced by the scaling-up of net gain to a landscape level, the ability to apply multipliers, and ultimately the possible vesting of management to non-governmental agencies with a focus on restoration. (Knight-Lenihan, 2020, p. 2058)

Knight-Lenihan offers a further critique noting that for developers the costs of on-site BNG delivery will be higher, so they may aim to structure any ecological investment in off-setting or off-site provision, the proviso being that no on-site damage to the ecological baseline is seen. What Knight-Lenihan (2020) fails to identify, however, is the inherent problem within all planning approvals, in relation to balance and betterment – who benefits? By focusing on the developer arguments against BNG, they fail to recognise that the delivery of multi-functional spaces required consideration of people, place (environmental and socio-culturally), and economic viability.

Biodiversity Net Gain arguably extends this argument beyond the human, to the more-than-human. The defined legislative priorities for BNG are: i. *onsite*, ii. *offsite*, and iii. *credits*, but England continues to conform to a plan-led planning system, and local government will continue to prioritise housing need. With the pressures on housing numbers to drive master-planning decisions, as noted in the 2023 Conservative Party Conference (Cuffe, 2023), developers and built and natural environmental professionals will need to weigh up the loss of land on site for housing versus provision of BNG. In addition, from the position of the core objective of the planning system and National Planning Policy Framework (NPPF) to deliver sustainable development, development needs to be allocated and approved where it can make a meaningful positive impact on sustainability, and many will argue that delivering more housing close to existing infrastructure will drive BNG offsite. This is perhaps the key reason BNG must be understood in conjunction with Local Nature Recovery Strategies (LNRS). The role of these nature-centric strategies will be to define and locate the optimal locations for specific biodiversity interventions, to deliver maximum local benefit for nature recovery and restoration.

Clearly, the obligations presented by the legislative requirements of BNG raise fundamental questions about the role of the planning system in an age characterised by uncertainty and competing beneficiaries (British Ecological Society, 2020). BNG, as a course of action to respond to the ‘nature emergency,’ comes at a time when obligations for LPAs to positively respond to climate change are already stretching resources. Prominent scientists have argued though that biodiversity loss is driving climate change and should therefore be a stronger priority (HM Government, 2020). Protecting existing ecological resources, creating new high-quality assets in locations to address biodiversity and habitat fragmentation, and enhancing depleted assets to accelerate nature recovery is arguably the single best course of action to both reverse the decline of habitats and species, and halt the rise in associated anthropogenic climate change (Seddon et al., 2021).

The UK planning system is engaging with this mission to address the impacts of the climate emergency via nature recovery. This requires supporting LPAs’ understanding of high-quality green infrastructure as a network of multi-functional, connected green and blue features integrated into the built environment that enhance biodiversity, support climate mitigation, adaptation, and climate positive behaviours, and promote health and wellbeing outcomes. In this way, local planning authorities can be empowered through clear policy and effective development management decision-making, to secure more sustainable forms of development. Biodiversity Net Gain, Local Nature Recovery Strategies, and the Environment Act are critical legislative and

policy instruments that can, and should, support the emergence of a more climate resilient form of planning (Planning Advisory Service, 2023b).

Delivering bigger, better, more, and more connected green infrastructure – including biodiversity creation and enhancement – through the planning system is potentially the most effective way of securing nature recovery. This in turn addresses the core question within both academic literature and wider policy making– how do we support equitable quality of life, place, and environment for all? The opportunity presented by BNG returns to the central premise of the original drivers of planning in the UK – providing people with a meaningful and daily connection with nature through access to a multi-functional natural and built environment.

Notes on Contributors

Ian Mell is Professor in Environmental & Landscape Planning in the Department of Planning, Property & Environmental Management at the University of Manchester. He researches the role of Green Infrastructure as a facilitator of socio-economic and ecological enhancement examining the role of policy and financing on urban greening practice. His work explores the role of government, the development and the environment sector on the creation of more liveable places. Email: ian.mell@manchester.ac.uk

Dr Gemma Jerome is Director of Building with Nature, a benchmark and accreditation system for green and blue infrastructure, Gemma advocates for decision-making that puts nature at the heart of development in a way that secures outcomes for people and wildlife. She co-chaired the panel for the British Standard for Biodiversity Net Gain and has acted in an advisory capacity on various government roundtables directing design quality and placemaking. Gemma is a Fellow of the Landscape Institute. Email: gemma@buildingwithnature.org.uk

ORCID

Ian Mell  <http://orcid.org/0000-0002-0544-0836>

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Towards a Biodiversity Inclusive Planning Culture in Melbourne's Urban Fringe

Marco Amati^a, Cris Hernandez^a, Chris Buntine^b and Amanda Dodd^c

^aCentre for Urban Research, School of Global, Urban and Social Studies at Royal Melbourne Institute of Technology, Melbourne, Australia; ^bNorthrop Consulting Engineers, Sydney, Australia; ^cCity of Whittlesea Council, South Morang, Australia

Introduction

Despite news about the inexorable continuation of the Sixth Extinction (Leakey & Lewin, 1995), occasional signs of hope appear. In June 2023, researchers at an undisclosed location west of Melbourne, on the ancestral lands of the Wadawurrung people, discovered a population of Victorian Grassland Earless Dragons (*Tympanocryptis pinguicolla*) thought for more than fifty years to be extinct in Victoria (Department of Climate Change, Energy, the Environment and Water, 2023).

It is significant that a so-called “Lazarus species” (Keith & Burgman, 2004) can be found in Australia, not in a remote location, but in a peri-urban area that regularly comprises the country's fastest growing municipalities (Australian Bureau of Statistics [ABS], 2023). More remarkable is that *Tympanocryptis* inhabits areas of natural temperate grasslands that are subject to degradation and fragmentation by agricultural and urban development and contact with feral species such as foxes, cats and rabbits (Department of the Environment, n.d.). Finally, that such a re-discovery should occur in a country which has seen a 6–10% extinction of all species since 1500 and where extinctions of reptiles, fish and frogs have all occurred in recent times (1961–2018) (Woinarski et al., 2019).

Following the re-discovery, conservation support came swiftly from Zoos Victoria and the Federal and State government, but also from the Victorian Planning Authority (VPA), which plans for, coordinates and approves the release of greenfield land on the fringes of Melbourne. On the discovery of *Tympanocryptis*, the VPA was informed that three of its projects in the Bacchus Marsh area were likely to have habitat that would support the recovery of the species. As a precaution, the VPA has paused preparation of the development of these projects until the

“conservation requirements for the species have been confirmed” (McGlew, 2023) by the Federal government, which will involve detailed surveys. The signalling of the species’ needs over those of the humans in the development industry, and coordination between different organisations as part of the planning process, are critical factors to ensure species survival.

In the following, we review and evaluate how well adapted the planning system in Victoria is to the challenge presented in planning for biodiversity. This is a complex area because the baseline information about how many species are present or whether extinction has even occurred is difficult to ascertain. By ‘planning for biodiversity’ we acknowledge that urbanisation and the development process necessarily involves human interaction with nature. However, in some cases, this can involve planting and the creation of biodiversity; in other cases, the emphasis is on the preservation of biodiversity with steps taken to mitigate any human interference that is seen to be harmful. It is also important to point out that First Nations peoples in Australia take a different approach from this binary one adopted generally by the planning system. Instead, they see themselves as part of nature and their actions as playing a positive and critical role in fostering the health of ecosystems (Gammage, 2011).

Authors of this *Interface* contribution (CB, AD) are both involved in these processes: the former focuses on existing urban locations whereas the latter concentrates on outer or peri-urban locations. Distinctions about location and area of focus are important because beneath the framework of laws and processes that support the Victorian planning system, a range of practices exist which continually push the boundaries of the system that is required to develop nature-positive outcomes.

The Victorian Planning System and Victorian Planning Culture

In Victoria, the context of planning is a highly fragmented one. Local governments raise revenues through rates, but have limited independence because rate raising is capped by the State government (Dollery et al., 2006, p. 30). In extreme circumstances, elected local councils can be sacked by the State government, so the level of the government that takes the majority of decisions on planning applications is only nominally independent. For an increasing number of developments, the Minister and not the local government is the responsible authority determining location, size and type (Rowley, 2023, p. 73). The planning system has been subject to a decades-long recurrence of the catch-cry to reduce red tape (Victorian Department of Sustainability and Environment, 2006), with a recent manifestation in the appointment of a “Commissioner for Better Regulation and Red Tape Commissioner” [*sic*] (Victorian Government Department of Treasury and Finance, n.d.). In an effort to streamline the approval process, local and State governments have undertaken a variety of experiments in expedited permit approvals (Rowley, 2023, pp. 66, 134).

The key piece of planning legislation in Victoria is the *Planning and Environment (P&E) Act* 1987. It provides for the protection of biodiversity as explained below, supported by the *Victorian Flora and Fauna Guarantee Act* 1988 and the *Commonwealth Environment Protection and Biodiversity Conservation Act* 1999. The P&E Act (1987) allows for biodiversity to appear as a consideration in overarching planning frameworks, zones and policies. Native vegetation removal is controlled by this Act and State and Federal legislation. The Victorian Government has a “no net loss” of biodiversity commitment, but this in fact represents a reduction of control since the policy had previously (until 2014) aimed to achieve a net gain (Rowley, 2023, p. 249). Additionally, an escape clause exists under section 52.17: the exemptions under this section,

combined with wide-ranging bushfire hazard reduction measures, means a great deal of biodiversity removal is invisible to the planning system. Even when it is visible, and a permit is applied for, 'no net loss' is difficult and expensive to enforce. In 2022, the Victorian Auditor-General concluded that the State was failing to meet its 'no net biodiversity loss' commitment because of a failure to ensure that the conditions of permits were met; poor oversight of biodiversity-offset sites; failing to account the number of approvals; and some sites had a doubling up of subscriptions (Rowley, 2023, p. 250; zu Ermgassen et al., 2023).

On first pass, this embattled and fragmented system underpinned by an antiquated Act that is anchored in past environmental concerns, would appear to leave little hope for biodiversity, let alone a species as rare as *Tympanocryptis*. Those who hope for stronger regulation instead must look to voluntary best practice mechanisms, such as the Green Building Council of Australia's *Green Star* scheme. This scheme allows for developers to signal best practice by the application of a prescriptive set of actions to get a more certain ride through the planning approvals system, relying on a points-based system to integrate biodiversity into the design. Yet these schemes are largely limited to land directly associated with new or existing building projects, and as they are largely design and construction tools. There are typically no post occupancy requirements around monitoring and reporting of biodiversity impacts.

Inserting Biodiversity into the Gaps in the System

Instead, we would argue that recent experience, including that involving *Tympanocryptis*, demonstrates how planning culture works to protect biodiversity in the gaps created by the rules. A planning culture develops where "certain standardizations of action, feelings, thoughts and communication are established or commonly accepted" (Wolff, 2020, p. 2215). This necessarily involves time to build up knowledge, and the sharing of that knowledge among professionals who understand the possibilities and limits of the regulations. While planning is known to be as conflictual in Victoria as it is in any jurisdiction, on both sides developers and planners are professionals who have a commitment to the public interest. The key to preserving and encouraging biodiversity in new and existing developments is to unlock that capacity for supporting a shared vision and purpose.

While the existing State and Federal Acts remain blunt instruments, networks of riparian corridors have been preserved in greenfield sites by a planning culture. One example is the Jackson's Creek corridor to the North of Melbourne in which a number strategic assessments allowed for the protection of Growling Grass Frog (*Litoria raniformis*) habitat, a species that is critically dependent on connectivity (Hale et al., 2013; Victorian Department of Energy Environment and Climate Action, 2022). Key to this practice is a recognition that biodiversity loss inevitably also means the loss of Indigenous culture and knowledge. This is expressed clearly in Figures 1 and 2 in which biodiversity and riparian corridors are allied to Indigenous knowledge of species and riparian spaces.

This steady expansion of biodiversity concerns and an awareness of the need for protection supports recent precinct structure plans that have been endorsed, such as Craigieburn West Precinct Structure Plan, a greenfield area slated for development (Victorian Planning Authority, 2022). Here a blue-green spine has been created that runs right through the centre of the entire precinct, which is 20 kilometres long. This corridor will connect people and biodiversity and nature through a whole new suburb that is being constructed. In addition to the corridor, large areas of existing trees have been set aside as part of the open Space network and then also

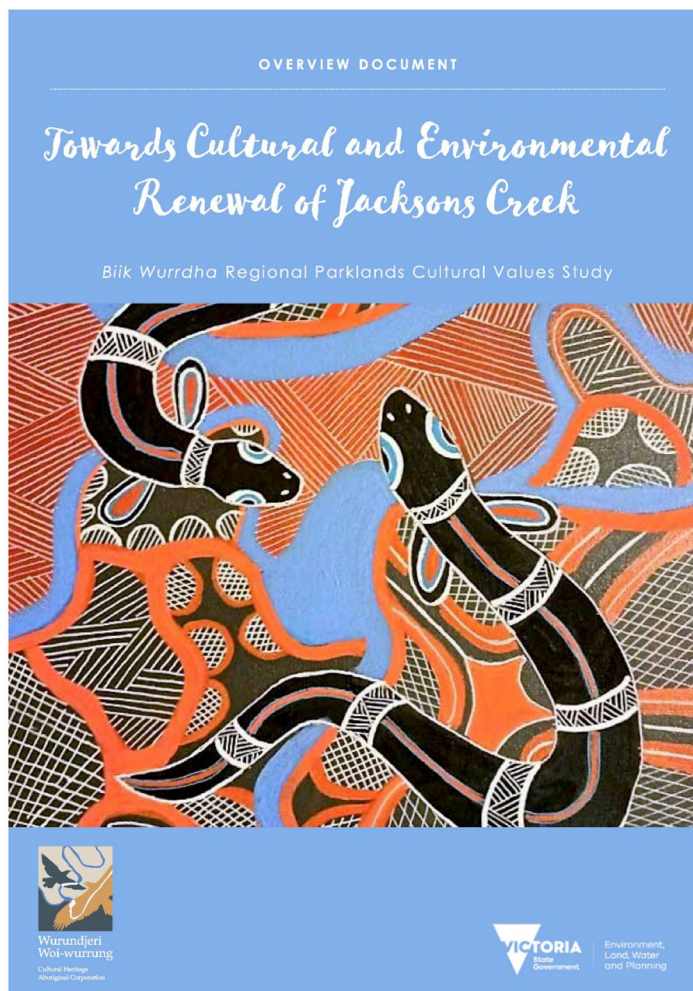


Figure 1. The bilik wurrdha cultural values study 2021 sets out the parkland priorities for the site. Wurundjeri woi-wurrung community. The cover artwork has been produced by ash firebrace and is set as the image for bilik wurrdha (Victorian Department of Energy Environment and Climate Action, 2021).

along some of the creeks that are running East-West. This has resulted in the creation of an integrated landscape. As a sector, there is movement towards understanding the role of green and blue as we build our cities.

The Challenges Ahead

We identify five significant challenges.

- The drive towards optimisation and rationalisation. In the Victorian planning system this drive is a decades-old tradition that sometimes inevitably collides with an increasing critique for distorting and instrumentalising the meaning of biodiversity (Spash, 2015).
- The focus on compliance. In Victoria, compliance is enforced by local government compliance teams who undertake assessments of factories and buildings. Training them and asking

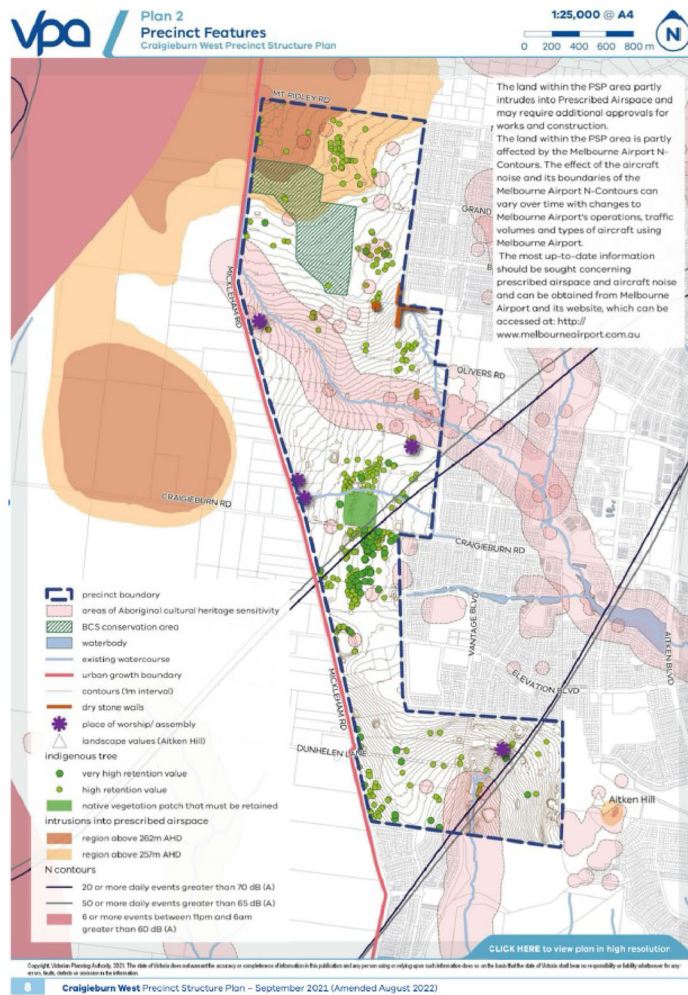


Figure 2. Craigieburn West Precinct Structure Plan – September 2021 (amended august 2022) note the areas of cultural significance aligned with the creeks (Victorian Planning Authority, 2022).

their time to be allocated to the compliance assessment and enforcement of complex biodiversity challenges, for example whether a green spine has been adequately planted or preserved, remains an open question. This requirement for skills is taking place amidst calls for making government and the planning approvals process more 'efficient.'

- **Time.** A third but key tangential threat to biodiversity in the planning system is time. Planners in Victoria are as subject to performance metrics as they are in other jurisdictions. This means that they have statutory requirements to maximum time limits to reach a decision. For example, 60 days are allowed before the developer can take the local government to the Victorian Civil and Administrative Tribunal. But of course, the 60 days remains the same regardless of the size and complexity of the decision.

- **Siloed action.** While shifts in culture and an embrace of biodiversity may be happening in one area of the planning process, such as design, this is not shared among other stakeholders

such as engineers or statutory planners. The key challenge remains how to champion and integrate biodiversity inclusive planning culture along all steps of the process.

- Political influence vs. the common good. The idea of biodiversity inclusive design is at the mercy of broader political influences. This causes inconsistency in application with some areas experiencing biodiversity inclusive design while other areas lag behind depending on the policies and ideals advocated and supported by the local government.

Conclusion

In parallel with the evolution of the P&E Act (1987), and its associated legislation to protect biodiversity, we would argue has been an evolution in the “cognitive frames” of professionals working at the interface of planning and biodiversity (Othengrafen, 2014).

In some areas of environmental management, practitioners look for stronger rules to enforce and ensure good environmental outcomes. However, the issue is that biodiversity outcomes continue to give way to developer values which prioritise yield and return. The culture of development teams themselves needs to shift towards one that values the rights of nature and embraces the responsibility of the healing and stewardship of ecosystems. Where client leadership is present and project teams are appropriately structured and facilitated, the creativity, energy and leadership of these teams can deliver biodiversity outcomes that far exceed the minimum compliance requirements of current planning schemes. This is not to discount that peri-urban areas in Victoria and Australasia represent ambivalent sites of ongoing (but hidden) daily extinction through urban encroachment, while opening up unexplored areas for re-thinking intra-species encounters and positive urban possibilities around nature in the city (Houston, 2021).

Planners do not always have time on their side to drive biodiversity outcomes. In these situations what is required is a focus on the longer game of ally-ship and cultural change within the organization. The key question then remains is whether this amount of time is enough to preserve biodiversity in the face of ongoing species loss.

Notes on Contributors

Dr Marco Amati is a Professor of International Planning at the Centre for Urban Research and Program Manager for the Master of Urban Planning and Environment in the School of Global, Urban and Social Studies at Royal Melbourne Institute of Technology (RMIT) in Melbourne. His research focuses on understanding urban greening at different scales. His most recent book is *The City and the Superorganism* (2021, Palgrave) that traces the history of biological thinking in urban planning. Email: marco.amati@rmit.edu.au

Cristina Hernandez is a PhD candidate investigating strategies to translate ecological knowledge to support ‘place’ for both humans and biodiversity to coexist. Trained in both ecology (through her undergraduate degree) and sustainable design (through her master’s), her research imagines a future where all built environment professionals incorporate non-human narratives into all their projects. Inspired by participatory design, she seeks to give a voice to species, natural cycles and habitats to enable non-human participation in design processes and deliver biodiverse cities. Email: S3826297@student.rmit.edu.au

Chris Buntine is a sustainability manager for Northrop Consulting Engineers, working with a wide range of clients around Australia to deliver sustainable and regenerative buildings and precincts. Since 2010 he has worked as a consultant in Melbourne, leading sustainability teams, and providing sustainability advisory, technical and certification services for public and private development projects. Chris has an interdisciplinary academic background that includes civil engineering, urban planning, business administration and building science. He is actively involved in advancing regional and national conversations around

regenerative design through his roles as a co-leader of Living Future Community – Australia and the Melbourne Regenerative Design Forum. Email: cbuntine@gmail.com

Amanda Dodd is the Manager of Sustainable Environment at the City of Whittlesea. Amanda has 13 years experience working in local government with a focus on biodiversity and environmental planning. Amanda was a founding member of the Local Government Professional Biodiversity Planning Network. In her spare time, Amanda volunteers with the Cairnlea Conservation Reserves Committee of Management and delivers the training program Building Resilient On-Ground Local Groups for Action. Email: amanda_dodd@live.com.au

ORCID

Marco Amati  <http://orcid.org/0000-0002-9600-5572>

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Nature Recovery and Agricultural Transitions: A Role for Land-Use Planning?

Iqbal Hamiduddin^a , Chris O' Brien^b and Helen Lucocq^b

^aBartlett School of Planning, University College London, London, UK; ^bBannau Brycheiniog National Park, Wales, UK

The New Agenda

Nature recovery is increasingly regarded as *the* new paradigm shaping planning policy across the United Kingdom, providing an urgent focus for policy activity, spurred-on by declarations of ecological crisis and daily reporting on the breakdown of the natural environment. Agriculture can be regarded as being in the vanguard of this activity. Although subsidy-driven agricultural practices have been identified as a significant contributor to the problem of nature depletion, the farming sector also has the potential to be an equally significant contributor to nature recovery.

Britain's farming sector has undergone a radical transition since the post-war period when our land use governance framework was set out in three key Acts of Parliament – the Agriculture Act 1947, the Town and Country Planning Act 1947 and the National Parks and Access to the Countryside Act 1949. At that time, the scale and pace of change in farming practices was not to be known nor the extent to which the 'siloing' of different land uses and management practices across the farming landscape would become outmoded in relation to finding an appropriate balance between nature and food production (House of Lords, 2022). In the aftermath of wartime food scarcity, subsidies were introduced to help agricultural enterprises to maximise production and minimise the cost of food to the consumer. The increasingly obvious damage that this has brought to nature, through instances of habitat destruction, water and air pollution, means that we are now set to financially support only those farmers willing to transition to new practices that support ecological restoration under the nature recovery paradigm.

But what does this new paradigm mean for land-use planning in areas of agricultural production? We offer a few insights from the *Bannau Brycheiniog* National Park, formerly the Brecon Beacons (or simply Y Bannau), in Wales. The Usk and Wye rivers on the eastern side of the national park have recently drawn attention to the need for agricultural practices to change to

allow rivers across Wales and the UK to recover from unsafe nutrient levels. Although agriculture is seen as being largely responsible for the problem, settlements and new development have also been viewed as being both a significant contributor and also one of the potential solutions to the problem. As the local planning authority, the national park has had to act to support the restoration of waterways, adding additional scrutiny to planning approvals on new housing development from 2020 so as not to hinder the pace of recovery in water catchments found not meeting their critical limits for phosphates (Hatton-Ellis & Jones, 2021). It has also supported farmers to reduce additional nutrient loading into the rivers such as through structures to cover manure yards or slurry storage tanks.

A Strategic Lacuna

Although the ongoing problem with river nutrient levels bring welcome focus to the potential role for planning in mediating between the needs of nature and agriculture, it is perhaps the need for strategic land-use management at the catchment scale that is most highlighted. This, of course, is scarcely a singularly Welsh problem, but the Environment Act (Wales) 2016 raised expectations in newly introduced Area Statements that were intended to set out a land use vision, fed from above by evidence and policy direction set out in the State of Natural Resources Report (Natural Resources Wales [NRW], 2020), the Natural Resources Policy (Welsh Government, 2017), and the National Development Framework (Welsh Government, 2018a), as well as related sector-specific strategies and local development plans. The first wave of Area Statements has fallen somewhat short of delivering on this ambition. For planning authorities with landscape-scale nature recovery ambitions, the shortcomings of “larger-than-local” land use coordination have been compounded by the continuation of siloed working practices across the different sectors engaged in rural land management.

The absence of planning oversight over some rural land activities can work against both nature recovery and the interests of local communities. Forestry has become a particular area of sensitivity, because of the recent surge in private sector woodland investment for carbon offsetting and the Welsh government’s ambition to bolster the forestry resource as a sustainable construction material (Welsh Government, 2018b). The conversion of productive agricultural land to woodland has, understandably, become a sensitive matter, particularly where viable hill farms become dismembered, with the built assets stripped from the land, farm converted to woodland and buildings sold-off. Through this process, farming-focused communities are becoming fragmented and dispersed (Gallent et al., 2023). The new woodland itself is often planted with fast-growing non-native species directed towards carbon sequestration and profit, within a voluntary carbon market described as the “wild west” in a recent market report (Credit Suisse, 2022), rather with the potentially compatible aim of nature recovery in mind. Some communities have begun to mobilise in opposition to the threat to traditional farming. At *Cwrt-y-Cadno*, just outside of the national park in Carmarthenshire, there has been a well-documented backlash against proposals by Foresight Sustainable Forestry Company for largescale afforestation, almost three quarters of which would be non-native conifers (*Financial Times*, 2022). Concerns have also been raised at the prospect of similar schemes within the west of the national park (Gallent et al., 2023).

Making Progress Regardless

Despite the current weaknesses in strategic-level land-use coordination, planning does have some power to promote nature recovery in relation to agricultural land. Indeed, local development plans themselves are capable of setting a vision for nature recovery across an area, that takes account of competing land use needs. In principle, this would mean setting out proposals for nature recovery on rural land use much in the same way for regular development, and with the benefit of community consultation. However, few planning authorities have the resources to develop such plans, let alone joining them with neighbouring local authorities to create consistency of a bio-region, such as a river catchment.

A number of local authorities and bodies have been active in developing joint policies to support local production and nature friendly farming practices through small-scale horticulture and community-supported agriculture (CSA). For example, Our Food 1200 (see: <https://our-food1200.wales/>) is an initiative established by the Conservation Farming Trust, supported by the National Park Authority and other public bodies, to secure 1200 hectares of farmland within the national park area, Monmouthshire and Powys for small-scale nature-friendly fruit and vegetable production. According to a recent report commissioned by the Trust (Terra Perma Geo, 2023) one of the key barriers to small-scale farming in the area is the lack of available and affordable rural housing for land workers. The National Park Authority has therefore begun working on joint supplementary planning guidance with Powys County Council around the provision of housing on small scale horticultural units in accordance with national policy. There are several CSA delivery schemes within Y Bannau itself. Wales has also taken a lead in promoting small-scale sustainable agriculture and off-grid living using a permaculture approach through its flagship *One Planet Living Policy*, as distilled into TAN 6 (Welsh Government, 2010). Although the National Park currently has only one scheme under consideration, there is at least the planning policy support in place for those wishing to embrace this model of living and working.

Planning's role in supporting ecologically positive practices in 'mainstream' agriculture remains an important area of policy development, nationally across Wales and the UK, as well as within Y Bannau. Planning authorities across the country are grappling with the question of how planning can make it easier for farmers "to do the right thing" by nature, whilst trying to understand what the wider implications of policy changes could be. Regenerative agriculture – an umbrella term for farming practices focused on restoring the health of the soil with wider benefits for conservation, carbon sequestration, catchment management in mind (World Economic Forum [WEF], 2023; The Carbon Underground and Regenerative Agriculture Initiative, 2017) – has begun literally to change the landscape where it is practiced. Within Y Bannau, the Welsh Government has recently invested in its own regenerative farming venture, at Gilestone Farm, to create a regional centre of excellence for showcasing regenerative agricultural practices in lockstep with nature recovery and other aspects of small-scale sustainable production (see: <https://gilestonefarmproject.co.uk/>). The Gilestone Farm proposals have not been without stiff opposition from those who view the idea of reducing the intensity of agriculture as undesirable, and potentially dangerous, given the shocks to the global food system experienced in recent years. The current absence of a national food strategy for Wales, to establish evidence-based food targets or a country-wide nature strategy establishing goals for nature recovery to inform a national spatial plan, means that specific areas of policy on agricultural land, notably the forthcoming Sustainable Farming Strategy, are operating in something of a strategic vacuum. As noted earlier, Local Development Plans are currently capable of creating land-use strategies for

an area, including for nature recovery and permitted land use activities for agriculture, but rarely does an entire river catchment – or other equivalent bio-region – fall within a single local planning authority territory. Planning authorities do, of course, work collectively – informally and through formal agreements, but without the benefit of an over-arching vision or set of strategic goals to work towards.

Unfortunately, the present situation is that planning can sometimes be viewed as a brake on certain farmland nature recovery activities. For example, a farmer wishing to create a scrape on their farm to benefit endangered wading birds such as curlew or lapwing, would need to obtain planning permission for the operational development. In reality, approval would almost always be granted, and usually with minimal fuss or delay, but perceptions and perceived barriers do have practical impacts, and few farmers welcome an additional set of paperwork to add to their administrative burden. We also need to recognise the additional development-related impacts that nature friendly farming might have. Not all regenerative agriculture focused farms will become visitor destinations such as Wild Ken Hill in Norfolk (see: <https://wildkenhill.co.uk>), but at least some will use the transition to new farming and land management practices as the foundation for diversification activities. This could generate the need for additional on-site facilities such as for car parking, production or retail and. These would, in turn, involve planning approval and, therefore, public consultation. The Gilestone Farm experience, thus far, indicates that this would not necessarily be plain sailing, and this is not simply a matter of public hostility against the idea of new development. As with the Knepp Wildland project (see: <https://knepp.co.uk>) in West Sussex in its early days, many members of this farming-focused community are doubtful about the notion of farmland being used for purposes other than food production. But the Knepp experience also suggests that attitudes soften over time, with familiarity of the regenerative concept – a model that can be promoted as a return to the farming practices of previous generations rather a radically new idea, and with growing confidence about the long-term financial viability of the approach. Although some farmers in Y Bannau quip that “you can’t go green if you’re in the red,” other farmers are embracing nature friendly farming practices including regenerative farming and rewilding to cut their losses and find an escape route from spiralling debts, as Isabella Tree’s account of the Knepp story so graphically depicts (Tree, 2019). In Wales, as in England, the new agricultural subsidies regime is set to create a fork in the road for the farming community – whether to ‘go green’ under the subsidy regime or to disregard government support and double-down on food production to make create a viable farm business whilst meeting no more than the regulatory baseline.

Redefining ‘Agriculture’?

The above discussion returns us back to the foundational question of what planning’s role should be in relation to agricultural enterprises undergoing profound change, and how land-use planning should respond to the changes? Governments will need to tread cautiously on relaxing permitted development rights in relation to built infrastructure. Despite the now frequent protests in the farming press, regulatory oversight of facilities such slurry storage tanks can be a good thing for the local communities that would be affected by a poorly placed and designed structures. But what about the planning permission that is needed to create a scrape for curlews or lapwing? Perhaps it is time to start removing some of the planning barriers for nature recovery that farmers face, and perhaps to bring nature recovery and farming together in planning policy as it is in farming practice. Perhaps the term ‘agriculture’ itself needs to be redefined

where it appears in statute, with a largesse that would encourage the sector to embrace positive ecological change?

Notes on Contributors

Dr Iqbal Hamiduddin is an Associate Professor at the Bartlett School of Planning, University College London. His work focuses on community-scale land use planning, housing and transport issues confronting urban and rural communities. He has published widely on rural housing issues, including in Bannau Brycheiniog National Park, and recent completed a report on Agricultural Transitions as part of the RTPI's Rural Planning in the 2020s project. Email: i.hamiduddin@ucl.ac.uk

Christopher O'Brien MRTPI is a senior planning officer with Bannau Brycheiniog National Park Authority. Currently focussed on determining a wide-ranging array of planning applications, he has previously worked within the National Park on its new Management Plan (2023–2028): *Dyfodol Y Bannau: The Future* and its First Replacement Local Development Plan. Having worked with the emerging Welsh legislative and policy context for the last 20 years within Welsh Local Planning Authorities, the RSPB and Natural Resources Wales, Chris' interest centres on the opportunities for how the 'planning' system may learn from and influence practice within other marine/land-use/environmental decision making process and frameworks. Email: christopher.obrien@beacons-npa.gov.uk

Helen Lucocq MRTPI is head of Policy and Strategy at Bannau Brycheiniog National Park Authority, where she has worked in policy development for the past 16 years. Based in Brecon, Helen was recently named as one of the future generation's commissioners top 100 changemakers for her approach and attitude to the power of policy making. Helen has long championed collaborative policy development, recently this has expended to understand how nature's voice gets incorporated into discussions, resulting in the much publicised 25 year Plan for Bannau Brycheiniog National Park, *Y Bannau: The Future*. This holistic land use plan has been described as a bold collaborative vision for the future of the Park, drawn through art, poetry, story. Helen hopes that this vision will allow *Y Bannau's* replacement Local Development Plan to be bolder in its linking of land use, development and ecosystem service and function. Email: helen.lucoq@beacons-npa.gov.uk

ORCID

Iqbal Hamiduddin  <http://orcid.org/0000-0002-9374-9533>

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Confronting the Politics of Unsustainability in Ireland's Citizens' Assembly on Biodiversity Loss

Mick Lennon^a 

^aSchool of Architecture, Planning & Environmental Policy, University College Dublin, Dublin, Ireland

Introduction

Biodiversity loss is a quintessential wicked problem – characterised by urgency, uncertainty, and complexity, the more we know about it the more difficult the problem becomes. Such loss is driven by the compound interactions of habitat destruction, over-exploitation, the spread of invasive species, pollution, and climate change. Biodiversity loss thereby presents a multifaceted challenge requiring significant societal change across numerous sectors. This is an especially difficult situation for politicians aware of the need for ambitious change but fearing that doing so is politically unfeasible in a world of other pressing issues, short electoral cycles and opposition from powerful stakeholders. The resulting “politics of unsustainability” (Blühdorn, 2011) ensures much talk about biodiversity loss but little action. It is in this context that citizens assemblies (CA) may be useful in breaking the deadlock. This is because CAs can help fit the square peg of deliberative democracy into the round hole of representative democracy. They do this by offering “political cover” and the input of considered public opinion for politicians when addressing wicked problems.

What is a Citizens' Assembly?

Citizens' Assemblies involve a cross-sectional cohort of citizens sitting to consider an important public issue or set of topics in greater detail than is normally feasible. CAs are usually characterised by a lengthy process (typically over a series of weekends) of focused and informed discussion that results in the provision of detailed recommendations to a decision-making authority. In theory, a CA is conceived as sketching what the whole citizenry would think about an issue were it to have the time, information and commitment to rational deliberation on that issue. CAs thereby offer politicians an alternative gauge of informed public opinion than the narratives of lobbyists or the reflex responses of public opinion polls.

Ireland stands out in discussions about CAs, not only because it has organised half a dozen but also due to the major political outcomes these have produced. This includes three successful national referendums leading to constitutional change, in addition to accelerating legislation on climate action. Such achievements have led some scholars to proclaim a replicable “Irish model” that would result in political “improvements” in other jurisdictions (Courant, 2021). Consequently, Irish CAs have become a beacon for those advocating greater deliberation in

democratic governance and have inspired initiatives elsewhere, such as the Climate Assembly UK. Against this backdrop, hopes are high that the Irish CA on Biodiversity Loss that took place between May 2022 and January 2023 can help break the politics of unsustainability characterising Ireland's appalling record on nature conservation (Morrison and Bullock, 2018).

Ireland's Citizens' Assembly on Biodiversity Loss

Ireland declared a National Climate and Biodiversity Emergency in May 2019. Since then, legislative progress on redressing biodiversity loss has been somewhat lacking. A large part of this malaise can be attributed to a politics of unsustainability shaped by a tangle of myopic horizons, opposition from vested interests and uncertainty regarding public appetite for concerted effort on the issue. Therefore, in February 2022 the Oireachtas (upper and lower houses of parliament) resolved to convene a CA on Biodiversity Loss. While at the time of writing (September 2023) the Oireachtas has only begun debating the recommendations issued by this CA, lessons can still be drawn from the process. This is achieved by mobilising the framework of 'input-throughput-output legitimacy' commonly employed in the analysis of deliberative democracy (Taylor, 2019) to identify the strengths and weaknesses of the CA. Broadly speaking, 'input legitimacy' refers to the quality of representation, the openness of the agenda, and the level of information. 'Throughput legitimacy' includes the quality and procedures governing deliberation, as well as any decision-making processes. 'Output legitimacy' comprises the weight of public endorsement.

Input Legitimacy

The Terms of Reference for the CA prescribed "A Citizens' Assembly' on Biodiversity Loss, with a total of 100 members including an independent Chairperson and 99 randomly selected members of the public" (Anon, 2023, p. 34). A challenge for the organisers was thus to ensure the national representativeness of this small number of participants. CAs conventionally use stratified random sampling of the electoral register based on demographic criteria to guarantee a diversity of perspectives and counteract self-selection biases. However, this risks aggravating inequalities in political representation between well-resourced and marginalised groups who for various reasons may not be recorded on the electoral register (e.g., non-nationals who nevertheless comprise a growing percentage of the country's inhabitants). Hence, the organisers deemed any adult resident in Ireland to be eligible. A total of 20,000 households received a postal invitation with 2130 valid responses returned. Using a demographic profile of the public based on national census data, targets were set for selecting members by gender, age group and geographic spread. The supplementary criteria of language (proxy indicator of nationality) and occupation (proxy indicator for socio-economic status and disability) were also used to enhance diversity in the final selection process. The chairperson of the CA was the 100th member.

The CA heard from 87 speakers representing a spectrum of organisations and sectors. The range of speakers was designed to maximise understanding of the topic. An innovation in this CA was the introduction of what became known as the 'Voices' section. Over 30 such 'voices' were featured in the CA including farmers, community groups, anglers and financial services experts. Additionally, six members of the Children and Young People's Assembly on Biodiversity Loss, which was an independent process, outlined their experiences and presented their recommendations. A further innovation was the inclusion of a fieldtrip to three different biodiversity

sites to hear from experts and observe *in situ* approaches to managing biodiversity in different conservation contexts. These innovations helped remedy criticisms of previous CAs in Ireland (Devaney et al., 2020) and are likely to have enriched the deliberations.

Since the first CA in 2012, Irish practice has been that the government decides to establish a CA and sets its terms of reference. In this sense, the government sets the agenda. The only input by the wider public into the process is via written submissions. It is questionable if this limited the scope of the agenda and curtailed the ability of the CA to examine associated issues pertinent to resolving biodiversity loss (e.g., engaging politically uncomfortable deliberations on the role of lobbying by powerful sectoral interests in environmental politics). In this context, Courant (2021) argues that a sounder way to secure strong input legitimacy would be to establish a 'right of initiative' allowing the public to petition and gather signatures to identify the topic(s) a CA should deliberate on.

Throughput Legitimacy

At its first meeting in May 2022, the CA members adopted six guiding principles "intended to provide a values-based approach to the deliberative process" (Anon, 2023, p. 38). These were: openness, fairness, equality of voice amongst all members, respect, efficiency, and collegiality. These helped ensure that deliberations proceeded in a constructive format. A sectoral approach was adopted in devising the programme for the CA. This included dedicated sessions on agriculture, forestry and woodlands, peatlands, freshwater, marine and coastal environments, as well as urban and built environments. Sessions were also held on protected sites and species, invasive species, industry, energy production, environmental rights, and biodiversity education. Whilst climate change is a significant driver of biodiversity loss, the CA agreed that as this was the subject of a previous CA in 2018 it would not be addressed in detail in the programme, although due to its influence it was inevitably discussed in various sessions. In most cases, the same process for each sector was followed: first information was provided by way of presentations and public submissions; then members reflected in small group roundtable discussions on what they had just heard. Almost 650 valid submissions were received from Ireland and around the world. Members were provided access to each submission and a brief summary of the submission was usually provided, allowing members to review each submission as soon as it was available. A facilitator and professional note-taker recorded all the conversations at each table. There followed a questions and answers session with the presenters. Recommendations were subsequently drafted from the notes taken at each table. Based on a proportional representation of ideas, these initial recommendations were then distilled, edited and re-drafted by members until there was agreement on the wording of recommendations. The members also had the chance to propose other recommendations at different phases in the process. This configuration enabled the members to engage with the issues raised in each sectoral discussion. However, given the volume and complexity of the issues addressed, it is questionable if sufficient time was allocated to allow the members to become adequately conversant with the complexity of the issues discussed. For example, a cursory overview of planning was supplied to the CA members. This provided only a thin profile of the multiple deficiencies of the planning system regarding biodiversity, such as the porosity of planning law on the issue, poor enforcement, along with a persistent lack of ecological expertise and funding shortages in planning authorities. Only the briefest sketch was also facilitated of the challenging trade-offs faced by planners in the decision-making process.

The members began deliberating on the entire suite of recommendations in the final scheduled meeting in November 2022. However, they felt that there was insufficient time to comprehensively discuss all the draft recommendations at this meeting. The members thus voted to hold an additional meeting during January 2023. This ability to extend the life of the CA buttresses the throughput legitimacy of proceedings by illustrating the responsiveness of the format to members' needs. Nevertheless, it also suggests the difficulty experienced by members in considering the multifaceted challenge presented by biodiversity loss and the task of formulating recommendations on how this should be addressed. In advance of the January meeting, the members agreed that voting on the finalised wording would take place via a secret online ballot. Following finalisation of the wording, the members voted electronically with 98% participation. Deliberative fora in collaborative planning are often predicated on seeking consensus. However, this process permitted members to support or oppose a recommendation, thereby helping avoid the threat of insipid consensus-focused outcomes that sustain the status quo. Secret voting is thus suited to wicked problems like biodiversity loss that demand potentially contentious solutions.

Output Legitimacy

The CA voted in favour of 73 high-levels recommendations and 86 sector-specific recommendations. A substantial majority carried each recommendation in almost all cases. Notable in the high-level recommendations is an endorsement for holding a referendum to amend the Constitution to enshrine within it the right to a clean, healthy and safe environment, as well to include procedural environmental rights regarding access to environmental information, public participation in environmental decision-making and justice in environmental matters. However, most remarkable is the recommendation to have a constitutional referendum on introducing substantial and procedural 'rights of nature.' This would provide constitutional recognition for 'nature' as a holder of legal rights, with a right to exist, flourish, be restored, and not to be harmed. The CA also recommends granting constitutional standing for the right of nature to be a party in administrative decision-making and litigation where its rights are impacted or likely to be impacted. In this context, it is observed that controversial recommendations issued by previous CAs were subsequently supported by national referenda that mirrored voting patterns within the CA (e.g., the 2018 referendum to repeal the constitutional the ban on abortion). Introducing such 'rights of nature' would fundamentally alter the legal position of nature in Irish policy, law and regulation, and would likely have a significant impact on planning. For example, legal cases could be taken against the national government and planning authorities for not upholding the rights of nature in planning policy formulation and development initiatives (e.g., infrastructure provision, urban park redesign, regeneration of heritage buildings), and in the decisions issued following the evaluation of third-party development proposals. This could significantly alter the trajectory of planning policy and decision-making as the planning system recalibrates to a remodelled legal envelope, which could be even more far-reaching than adjustments made following the introduction of The Climate Action and Low Carbon Development (Amendment) Act 2021 (which commits Ireland to 2030 and 2050 targets for legally-binding reductions in greenhouse gas emissions). However, in Ireland the workings of a CA are legally structured to sandwich the process between the right of the Oireachtas to establish a CA (and set its terms of reference), and the subsequent right of the Oireachtas to act on the recommendations emanating from it. This effectively provides politicians with agenda-setting and veto

powers over CA recommendations, thereby supplying political scope to control its potential impacts.

In the case of sector-specific recommendations, the CA sought a pragmatic redress to funding shortfalls at the local level by advocating that levies accrued by planning authorities on developments should include a proportional contribution that is ringfenced for biodiversity enhancement. More stringent standards concerning soil sealing and levels of green space provision are also supported. However, potentially more significant is the recommendation that “Planning policy must be updated to require all new developments to have a significant net-gain for the environment and biodiversity.” Although what constitutes ‘significant’ will likely be much debated, this requirement could overhaul the development sector’s relationship with biodiversity by transforming it from a source of loss to a vehicle for gain, in much the same way as the Environment Act 2021 requires a minimum of 10% biodiversity net gain for all planning permissions granted in England from November 2023 (with some exceptions).

Conclusion

The Citizens Assembly format offers a means to resolve the scalar challenges of democracy by fostering depth of informed inclusive deliberation on multiple scenarios before making recommendations for consideration by the parliament and wider public. A key advantage of CAs is that they can encourage politicians to tackle wicked problems by supplying them with the “political cover” to effect real change seen as otherwise politically unfeasible. In this sense, the CA on Biodiversity Loss holds promise to remedy the politics of unsustainability that has characterised Ireland’s approach to nature conservation. However, as demonstrated by the shallow impact of the recent French Citizens’ Convention for Climate Change (2019–2020), a CA is only as effective as the political support it receives. It is therefore uncertain if the volume, range and vague wording of some recommendations advanced by the CA will allow politicians to claim they are acting on the work of the CA by cherry-picking recommendations requiring little real change while simultaneously rejecting those that necessitate a fundamental reform to ‘business as usual.’

Planning will most likely be at the coalface of implementing the recommendations that achieve political support. In this context, it is notable that the CA recommendations will be debated by the Oireachtas before – and most likely during – deliberations on the review and update of Ireland’s National Planning Framework (NPF). Recommendations advanced by the CA may thereby prime and inform discussions on the NPF, such that ambitious ideas not traditionally given a hearing in that forum may be aired in the knowledge that they have been endorsed by a cohort of constituents selected for their representativeness of the broader population. Politicians may thereby be forced to publicly justify why they are rejecting, endorsing or amending such recommendations in the context of planning’s role in arresting biodiversity loss. Planning may thus be at a crossroads, where once-in-a-generation choices are made that will determine if it serves as an effective means to help Ireland switch paths by abandoning the well-worn politics of unsustainability and instantiate better ways of living with the non-human inhabitants of our planet.

Notes on Contributor

Mick Lennon researches and teaches at the School of Architecture, Planning and Environmental Policy, University College Dublin, Ireland. His work focuses on the intersections between planning and

environmental policy, with a particular emphasis on green-blue infrastructures, sustainable communities and climate change adaptation. Email: Michael.lennon@ucd.ie

ORCID

Mick Lennon  <http://orcid.org/0000-0001-8613-092X>

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Planning for Nature Recovery: Land, People, Markets and Metrics

Richard Blyth^a, Gavin Parker^b and Mark Scott^c

^aRoyal Town Planning Institute, London, UK; ^bDepartment of Real Estate and Planning, University of Reading, Reading, UK; ^cSchool of Architecture, Planning & Environmental Policy, University College Dublin, Dublin, Ireland

Introduction: Is the Biodiversity Crisis Too Big for Planning?

While there is clearly an increased interest in both multifunctional land use and in nature recovery across many territories, there are many different issues to be addressed, as some of the papers in this set of essays help demonstrate. It is still the case that many calls are made upon land and also that past practices and assumptions are being challenged. Planning practice is now being geared to help address some of the challenges. Many of the approaches being implemented or discussed are still in the making or provide glimpses of what could be done in more mainstreamed efforts. Other instances give cause for alarm and raise philosophical or practical questions – all of them still require much greater research attention. Clearly the challenge of nature recovery goes far beyond planning and requires a 'whole-of-government' and 'whole-of-society' approach, ranging from very local, site-level problem-solving to global agreements and targets. At the same time, planning has a potentially significant role – for example, in the delivery of nature recovery strategies and biodiversity-sensitive spatial planning, or as a spatial coordinator of actions that may span entrenched siloes, such as forestry, energy, agriculture, or housing. Similarly, spatial frameworks may provide the means to capture the co-benefits of nature recovery interventions, including synergies with climate action, energy security, quality of

life and health. At the same time, we are at risk of further institutional overload of local, regional and national planning bodies already burdened with targets and ever-expanding functions, often with diminishing resources and reduced institutional capacity. In an *Interface* collection published almost two decades ago, Heather Campbell asked if climate change was a challenge too big for planning (Campbell, 2006), and a similar question can be applied to the biodiversity crisis. By way of capturing the themes involved we have imposed a set of cross-cutting labels that are worth iterating in this closing piece, set across: people, land, markets and metrics.

People: Nature, Equity and Involvement

The *Interface* essays above exhibit a number of critical themes and questions relating to issues of equity and involvement. Authors have pointed to the need for a ‘just-transitions’ approach for nature restoration across scales and territories. This label is useful in so far that it allows for questions of participation and collaboration to be highlighted, as well as raise fairness in outcome terms. While experiments of engaging with the public are emerging (as highlighted in Lennon’s description of Ireland’s Biodiversity Citizens’ Assembly), what is clear is that the more common situation is that people are side-lined by technical processes and solutions, with limited ability to shape outcomes, all of which run the risk of not enjoying public trust and therefore support.

A second linked issue under the category of people is the political milieu in which nature action is considered. The drive towards greater multifunctionality and efforts to address the nature crisis are not actually occupying a settled political consensus in many places – and many would contend this is unlikely to be settled. Perhaps greater confidence through deliberative approaches can help here, as Mick Lennon suggests in his contribution. How the environment, let alone planning, has become drawn into the so-called culture wars (Parker & Dobson, 2023), may be surprising for some, but a lack of sustained or determined leadership across this subject has resulted in notable policy wobbles and pushbacks in recent months, let alone years. Such uncertainties are manifest in political rethinks in the recent debate surrounding the EU Nature Restoration Law, the UK government rowing back on net zero commitments and a longer-term wider farming interest which has tended to exhibit resistance to nature recovery agendas. This latter point proved particularly critical in the difficulties experienced in the adoption of the Nature Recovery Law within the EU as farming interests mobilised effectively against proposals aimed at making room for nature through re-wetting, re-wilding or afforestation. These instances highlight how such uncertainty can act to slow or water down prescriptions to the challenge of enhancing natural capital as well as changing behaviours.

Skills, Knowledge and the Goal-Stretching of Planning

Political factors are accompanied by technical and capacity questions that relate to the knowledge and skills which are needed to assess and implement as well as monitor nature recovery activity. Specialist knowledge is also significant when allied to pre-existing difficulties of traditional siloes and urban/rural divides; when in reality the need to focus on land as a fundamental resource and to bridge professional or public sector boundaries are needed. This highlights for us how sensitive multifunctionality is critical; and how integrated thinking about land use constitutes a new form of strategic planning – of a different kind perhaps from previous sub-regional activities, but still strategic in its ambition across issue, time, boundaries and land use

activity. Recent efforts to develop land use frameworks and policies are promising but appear complex. For example, in a recent review of land use in Ireland, over 120 separate policy documents across government exhibit a land use dimension but lack any coordination or spatial contextualisation. However, despite the complexities, an integrated land use policy has the potential to bridge urban and rural space and to align questions of how we use land in a more holistic way as well assisting with addressing the nature crisis.

The planning system in England has been tasked with ensuring that most development delivers a 'net gain' in biodiversity. While many questions remain about the principles involved, the practice too is faltering with English planning authorities seemingly unprepared. As Mell and Jerome highlight, whether planning authorities have the skills or resources to assess or promote BNG is at issue. This also raises questions for the scope of planning education and continuing professional development and the make-up of planning departments that require more ecology knowledge (in-house or otherwise).

Nature, Markets and Planning Systems

If politics, knowledge and inclusivity are uncertain, then so too is the basis of some of the policy mechanisms and regulatory systems being devised, relating to, say, biodiversity gain as well as wider nature recovery targets. The broader ideological orientation for many governments tends to assume market solutions. We have seen a critical take emerge in a wider literature concerning how nature is being appropriated (see Smessaert et al., 2020; Knight-Lenihan, 2020). The example of how biodiversity is being valorised and 'drawn up' in metrics is a clear case in point. While the planning system in England is being asked to act as a market broker in land and 'nature,' as well as development, these risk removing the 'planned' element entirely, to be replaced by a market driven system in which the land used for 'biodiversity' is neither the most effective for that narrow purpose nor the best at achieving wider natural capital outcomes. As the *Interface* essays indicate, alternative approaches exist and there is a clear case for better international comparative work given that concerns that have been raised internationally over a whole host of risks and negative unintended ecological and social consequences that could arise (Chausson et al., 2023; HM Government, 2021).

There is a strong case for states to take a more proactive stance and to develop the mission-driven approach to guiding nature recovery (Mazzucato, 2021). The English government (environmental policy is largely devolved) has ambitious plans for nature recovery, but its proposed strategy positions the government as a *relatively passive player* whose job it is to create compliance markets and de-risk private investments in nature to ensure they deliver appealing returns (Kedward et al., 2022). How nature recovery is being approached in England has become messy and fragmented. Should we be all that surprised? Perhaps not, but it is disappointing nevertheless.

A further aspect of this relates to clashes between existing planning cultures and new data/metric driven approaches. The increasing reliance on metrics, environmental assessments, modelling, and new professions, such as credit advisors, risk diminishing the human, cultural and behavioural factors that underpin the complexity of a nature recovery. This adds to philosophical concerns about the marketisation of nature in the governance of nature recovery – another example of the planning and the delivery state ethos? Or, indeed, 'who benefits?' type questions, for example, when carbon offsetting displaces farming or when green gentrification results in displacing local communities. And will such approaches actually deliver positive results

on and in the ground? A recent damning assessment of New South Wales's (Australia) Biodiversity Offsets Scheme, for example, illustrates the difficulties associated with designing offset markets as part of development management decision-making, leading to concerns with the scheme's integrity, transparency, financial viability, and effectiveness in protecting vulnerable species (Audit Office of New South Wales, 2022).

At least recognition of the need for spatial strategies has surfaced and at a county level in England is manifest with Local Nature Recovery Strategies, yet even this has met with concerns over what appears to be a siloed approach being sustained. It is true that there are somewhat greater 'credits' for providing biodiversity credits in a way which complies with the LNRS. However, the UK Government still seems to see LNRS as a kind of mapping exercise of nature assets which provide 'signals' to the 'market,' rather than a plan-led approach to focusing nature recovery in the places where it will deliver the greatest multifunctional benefits. LNRS are confined to 'nature' and play no role in the clearly linked areas of climate action, energy and water planning. Moreover, it is telling that whilst local plans are obliged to take account of LNRS, there is no corresponding requirement for LNRS to take account of the various local plans in their areas, despite the clear linkages. This hardly seems the right way move forward to a joint approach on land use.

Concluding Remarks

So where does this leave us? Is the biodiversity crisis too big, or rather too complex, for planning? As the papers in this *Interface* suggest, planning systems may struggle to cope without adequate resourcing and skills. However, from site-based problem-solving to spatial coordination of nature recovery interventions at a national level, planning has much to offer and must be part of the wider conversation to address this global challenge. This is not just a challenge to policymakers and practitioners – this *Interface* forms part of an urgent call for more research from planning scholars that positions nature recovery as a critical planning goal and untangles the implications and challenges for planning theory and practice.

Notes on Contributors

Richard Blyth is a Fellow of the Royal Town Planning Institute and has been Head of Policy Practice and Research at the RTPI since 2011. Email: Richard.Blyth@rtpi.org.uk

Gavin Parker is Professor of Planning Studies in the Department of Real Estate and Planning at the University of Reading. Email: g.parker@reading.ac.uk

Mark Scott is Professor and Dean in the School of Architecture, Planning & Environmental Policy, University College Dublin. Email: mark.scott@ucd.ie

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