

A learning journey into contemporary bioregionalism

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Abstract

1. *Bioregioning* is a new wave of bioregional discourse that appears to be attracting interest among sustainability researchers and practitioners.
2. Through interviews with contemporary leaders and a reflexive research process, we explored bioregioning experiences across seven countries. Our paper outlines the motivations, practices and narratives that we encountered and positions these observations against prior expressions of bioregional thought and broader themes in sustainability research.
3. We found that in bioregioning, the concept of a bioregion remains important and seems to attract people to the discourse in three ways: It inspires visions of the future that encompass more-than-human thriving, it creates a conceptual container that enables a strategic narrative for change that connects places to larger scales, and it justifies the importance of everyday people exercising their right to 'do' something.
4. The combination of these motivators shows bioregioning's relationship with earlier expressions of bioregional thought: Like early bioregional thinkers, regional scales carry cognitive and strategic appeal, and like critical bioregionalism, power and justice are foregrounded to ensure the process of change is ethical. We suggest that in the shift to bioregioning, the bioregion serves as a boundary device, justifying (for some) a focus on regional scale action which has made bioregional discourse unique, and for others, rationalising participatory or emotional priorities. This lets bioregioning enact a dialogic approach to change and enables practitioners to consider questions of scale in open dialogue with emotive place-based dynamics, bringing nature re-connection and social-ecological systems research into consideration and overlap with the practice of bioregioning.
5. We observed parallels between our research process and the central features in bioregioning; both respond to ambitions and calls within sustainability to enact relational values and surface contextualised knowledge while also valuing generalisations and abstraction. Our study, we suggest, provides one example of how research into human-nature relationships in Western sustainability might be pursued in line with these ambitions.

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KEYWORDS

bioregionalism, environmental politics, place-based sustainability, relational research, social-ecological system research, sustainability transitions

1 | INTRODUCTION

In the interdisciplinary field of sustainability science, a large body of work is seeking to support contextually nuanced approaches to sustainability transformations, account for complex system dynamics and go beyond technocratic frames of sustainability to engage with values and worldviews (e.g. Bennett, Biggs, et al., 2021; Fischer & Riechers, 2019; Leventon et al., 2021; Pereira et al., 2020). In pursuing this difficult and complex agenda, the related and overlapping research fields of social-ecological systems (SES) research, human-nature connection (HNC) studies and sustainability transitions and transformations literature have helped re-energise sustainability as a place-based phenomenon and integrated humanities and social science perspectives into the questions asked, the methods used and the outcomes favoured (e.g. Biggs et al., 2021; Ives et al., 2017; Masterson et al., 2019; Riechers et al., 2021).

In doing so, efforts to approach sustainability through deliberative and bottom-up approaches have gone from compelling calls (MacGillivray, 2015; Stirling, 2015) to concrete action, with influential global programmes in research (Norström et al., 2022) and in policy (Pereira et al., 2021) deliberately adopting a contextual focus due to the ethical and qualitative nuance that it brings. These broad shifts can be partially understood by positioning them in what West et al. (2020, p. 304) described as a 'relational turn' occurring in sustainability science that is enabling 'more dynamic, holistic accounts of human-nature connectedness; more situated and diverse knowledges for decision-making; and new domains and methods of intervention that nurture relationships in place and practice'.

Despite these efforts and synergies, key challenges remain in navigating sustainability's shift towards place and in applying relational thinking in research and practice. Pursuing a commitment to place-specific responses without ignoring dynamics at larger scales is a salient concern given the state of planetary-scale health (Rockström et al., 2009; Steffen et al., 2011), and balancing calls to be both scale-conscious and context-specific is a longstanding challenge and tension that continues to be raised (Balvanera et al., 2017; Bennett, Morrison, et al., 2021; Hull & Liu, 2018; Lorbach et al., 2020; Norström et al., 2022). Furthermore, while a relational paradigm and its connection to a more contextual approach to sustainability science has been explored in conceptual manner (e.g. Chan et al., 2018; Walsh et al., 2021; West et al., 2018) and evidence has been built to demonstrate how relational perspectives can lead to practical shifts in policy (e.g. Chan et al., 2016), more work is required to understand what this paradigm looks like in empirical examples (Eyster et al., 2023); critically discuss its pragmatics, politics and challenges (Raymond et al., 2021);

and test how relational values and epistemology might influence the practice of sustainability research (Eyster et al., 2023; Fish et al., 2022).

Bioregional discourse has long sat at the intersection of many of these priorities and the challenges that they bring. Through its central concepts of the '*bioregion*' (a spatial unit), and '*bioregionalism*' (an environmental philosophy), bioregional theory has sought to offer solutions that balance a place-based environmental movement and a systematic engagement with scale. With visions of regionally scaled systems that re-design society into socio-ecological networks and an ambition to activate a sense of love, care and responsibility for the places we inhabit (Gray, 2007), the bioregionalists' pursuit of pathways to (re)establish normative relationships between humans and the environment carry obvious parallels to the questions and agendas that sit within in SES and related fields of research.

However, bioregional thought is not static and has seen various shifts in emphasis. In Hubbard et al. (2023), we outlined a summary of this history, describing three tendencies in bioregional thought. First, particularly in early bioregional writing, there was an 'ontological tendency' in which the bioregion was understood as a naturally defined unit, and the focus of the movement was to adopt regional scale governance systems (see Berg & Dasmann, 1977). Second, there has been a 'critical tendency' which responded to concerns about the interdependencies between places and the power relations embedded in those relationships (Plumwood, 2008). Finally, a more recent and emerging 'processual tendency' uses 'bioregioning' as a verb (Thackara, 2019). This draws on both ontological and critical perspectives and emphasises the process, rather than the ends, of change (Hubbard et al., 2023). With bioregional terms and concepts returning as visible features of major academic conferences (Transformations, 2023); popular books (Brewer, 2021; Kimmerer, 2020; Wahl, 2016); and in the language of various movements and networks of practitioners (AELA, n.d.; BFI, n.d.; Bioregional Learning Centre, n.d.; Bioregioning Tayside, n.d.; The Planet Drum Foundation, n.d.), we saw a need to re-investigate bioregionalism and critically discuss what it might have to offer sustainability research and practice.

This paper explores findings from a collaborative learning journey into contemporary bioregionalism, framed as 'bioregioning'. We structured our investigation around a series of research questions that were explored first through the literature, and then through interviews with a group of prominent thinkers and practitioners in North America, South America, Continental Europe, the United Kingdom and Australia. Our research provides an update as to what contemporary bioregional discourse and practice looks like. We explore how bioregioning balances its commitments to being a place-based environmental movement alongside its interest and approach to larger scales and systems

of change, discussing the opportunities, tensions and complexities this brings. In undertaking the research, we employed a collaborative and reflexive approach that let us explore patterns in the data alongside our subjective and place-specific experiences, which we found deepened our analysis. This paper summarises the outcomes of our investigation:

- *Section 2* outlines our methodology to gather and analyse the data, and our positionality in the research.
- *Section 3* provides additional background on bioregional practice and theory from our desktop review of the literature. It summarises how bioregional concepts have become theoretically fuzzy and identifies questions that our interviews with thought leaders sought to address.
- *Section 4* presents findings from interviews with leading thinkers and practitioners in bioregional action. It provides an updated understanding of contemporary expressions and viewpoints in bioregionalism, and shows the potential directions bioregioning might take.
- *Section 5* critically discusses insights from the research process. It explores why bioregional ideas appear to be garnering interest and positions the opportunities, tensions and contributions that contemporary bioregional perspectives might bring to sustainability research and practice.

Through our investigation, we argue that both the challenge and the appeal of bioregionalism lies in its open engagement with the politics and discontents of pursuing place-based environmentalism in ways that are conscious of larger-scale and inter-place interactions while remaining true to an emergent, dialogic process of change. There are parallels in the experiences of bioregioning and the journey within our research project. We propose that both are a metaphor for the epistemic tension that questions of scale continue to bring to SES research. The key lesson that bioregioning carries, we suggest, lies in a nuanced shift in emphasis that is enabled when (seemingly) universal concepts are accepted as capacious boundary devices, enabling the practice of sustainability to shift from an idea-driven approach to an ethic-driven approach. By sharing our findings, we hope our paper can deepen discussions about the challenge of balancing a commitment to large-scale change with a concern for contextual nuance, surface the value of critical reflexivity and provide another illustration of what the 'relational turn' might look like.

2 | METHODOLOGY

Our research project emerged after discussions between 14 researchers and practitioners, including the authors of this paper, who came together to discuss bioregional thoughts and concepts over a series of online discussions during 2021. We began by exploring how we each applied the concepts in our work and mapping our individual interests and collective understandings of 'bioregions' and 'bioregionalism'. The discussion led us to identify the literature,

institutions or individuals that had influenced our interest in bioregional concepts. The discussions led to further questions, uncertainties and areas where we sought deeper understanding, inspiring the co-authors to undertake a qualitative research project into contemporary bioregionalism over the course of 2021–2022.

The first stage of our research involved a collaborative literature review. We complemented a narrative literature review with a simple discursive scan to identify prominent uses and users of the terms bioregion and bioregionalism on the English internet and in academic literature. Combining the results of these methods gave us a grounding in the different ways that the terms are currently being used and have been used, who is using them, and which users/uses are most prominent. Results of this work are summarised in *Section 3* and elaborated upon in Hubbard et al. (2023).

Drawing on the findings from our literature review, we generated a list of key thinkers within the contemporary bioregional movement (*Table 1*). In the second phase of our research, we conducted semi-structured interviews with each of these individuals to explore how they saw contemporary bioregionalism being reinterpreted and practiced. Written and/or verbally informed consent was obtained from the interview participants, based on their preference, and research was conducted inline with ethics approval from the University of Sheffield (Ref. 042640). Findings from these interviews is the focus of *Section 4*.

The data generated across these methods were analysed using reflexive thematic analysis (Braun & Clarke, 2006), generating both latent and semantic meaning. Reflexive thematic analysis is a 'situated interpretive process' (Braun & Clarke, 2021, p. 334), drawing on researcher subjectivity as a resource. Doing this collaboratively, we found significant value in surfacing our own experiences while interpreting the interview data. Dedicated sections of our results will identify where we drew on our own experiences to deepen the analysis. Given our questions about how bioregions and bioregionalism are being interpreted in different contexts/geographies, the experiences of the authors within similar geographies to the interviewees provided particularly valuable contributions and opportunities for our analysis. This process, we observed, became a vehicle for us to practice how relational values might be employed within our research process. In addition to the content/focus of our study, such as the influence of 'bioregions' on human–nature relationships, we sought to ensure that good will, care and generosity were centred in the way we approached the creation of knowledge through engagements with each other, interview participants and via the presentation of our findings. As such, our research draws on relational ethics in our approach, and we also discuss relational ethics, ontologies and epistemologies due to the characteristics of our subject matter, bioregioning.

Our intention to respect and reciprocate the generosity of our respondents shapes how results are presented in this paper. We offer the context behind quotes and observations where it helps, and at other times, we anonymise quotations to avoid a reductionist approach to the stories of participants in an effort to represent them fairly.

TABLE 1 List of participants and descriptions, provided with consent.

| Participant | Location | Context of engagement |
|-----------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Isabel Carlisle | UK | Isabel Carlisle is co-founder of the UK Bioregional Learning Centre in Devon. The Bioregional Learning Centre uses a design and action learning approach to run projects such as <i>Voices of the Dart</i> , a 'A river-long exploration combining local knowledge, climate science, data and the arts' (UK Bioregional Learning Centre, 2021–22) and the 'Devon Doughnut' (2021), which is a co-produced adaptation of the doughnut economics model (Raworth, 2017) for Devon. Isabel's background is in archaeology and art, as a critic and curator |
| Glenn G. Page | Gulf of Maine Bioregion, USA | Glenn Page, founder of SustainaMetrix, also convenes COBALT (Collaborative for Bioregional Action Learning and Transformation) and Team Zostera. Based in unseeded Wabanaki territory, currently Portland Maine, USA, his work focuses on adaptive bioregional governance/stewardship, applied ecological restoration, food–energy–water transitions in the Anthropocene, and adaptive learning by applying the principles of Blue Marble Evaluation which he co-developed with Michael Quinn Patton. Glenn and colleagues at COBALT are developing a prototype Bioregional Digital Twin for the Casco Bay Bioregion, Gulf of Maine and Tayside Bioregion in Scotland that could be models for the world |
| Joe Brewer | Colombia | Joe Brewer is the founder of Earth Regenerators, a collaborative learning platform for bioregional practitioners and global study group. Since 2019, Joe has been living in Barichara, Colombia, regenerating the landscape using bioregional principles. He has also published a book titled <i>The Design Pathway for Regenerating Earth</i> which details his approach. Joe's background is in complexity science |
| Michelle Maloney | Australia | Dr. Michelle Maloney (PhD) is recognised globally as a leading practitioner in the field of Earth-centred law and governance, and works on several programmes promoting bioregional ecological stewardship. Through organisations including the Australian Earth Laws Alliance (AELA); the New Economy Network Australia (NENA); Future Dreaming Australia; the Global Alliance for the Rights of Nature (GARN); and the Ecological Law and Governance Association (ELGA), she seeks to increase the understanding and practical implementation of Earth-centred governance—with a focus on law, economics, cross-cultural knowledge, ethics and the arts—in order to transition modern societies towards a more harmonious relationship with the natural world. Michelle lives in Brisbane, and her work is focused on Australia |
| John Thackara | France | John Thackara is a writer and organiser of place-based design events and courses. He is a visiting professor at Tongji University and Milan Polytechnic University, as senior fellow at the Royal College of Art. John draws on concepts of bioregioning and urban-to-rural connection in his work. John is British, now living in France |
| Daniel Christian-Wahl | Spain | Daniel Christian Wahl is the author of <i>Designing Regenerative Cultures</i> —so far translated into eight languages. He works as a consultant, educator and activist with NGOs, businesses, governments and global change agents. With degrees in biology and holistic science, and a PhD in Design for Human and Planetary Health, Daniel's work had a bioregional focus since 2002. Since 2011 Daniel has been weaving regional and international collaborations focussed on the island of Mallorca as a real-world lab for bioregional regeneration. Winner of the 2021 RSA Bicentenary Medal for applying design in service to society |

3 | BACKGROUND AND RESEARCH QUESTIONS

3.1 | What is bioregionalism?

Ankersen et al. (2006, p. 408) define bioregionalism as a social movement and ecophilosophy which asserts that 'natural ecosystems and cultural contexts should dictate, or at least influence, how humans organise their relationships with the environment'. Broadly, bioregionalism promotes human communities being organised within naturally defined units of bioregions, encouraging a shift towards ways of living that are enabled and constrained by the landscapes and ecologies that we inhabit.

Bioregionalism was first conceptualised in San Francisco in the 1970s (Whatmore, 2009), but its roots can be traced through a confluence of ideas including 1930s regionalism, the DIY and grassroots activism of the 1970s (Pfueller, 2008) and influences such as Schumacher's (1973) *Small is Beautiful*. Peter Berg is largely credited with popularising the term 'bioregionalism'

(Parsons, 2013) and shaping the movement (Wiebe, 2021), along with thinkers such as Gary Snyder and Kirkpatrick Sale. Berg's essay *Reinhabiting California* (1977), written with Raymond Dasmann, conceptualised both the bioregion as a spatial unit, and the idea of 'living in place' as a strategy for developing sustainable communities. Bioregionalism came to represent a way of understanding the world, an environmental philosophy and a strategy for sustainability which, over the decades, has been used and promoted by a range of actors.

3.2 | What are bioregions?

Bioregions are a central concept in bioregional thought and have helped to mobilise different expressions of bioregionalism. Bioregions have been described along a continuum of interpretations, from those that emphasise their existence as 'natural' expressions of the land, to those that view them as culturally constructed 'landscapes of the mind' (Hubbard et al., 2023).

Peter Berg described bioregions in a way that implies they are large-scale areas that group smaller units for categorising spatial and ecological systems. Using examples of the Nile, the Amazon, the Gulf of Maine and Cascadia, his writings point towards ecological units that are large enough to describe regional patterns and dynamics that influence planetary-scale processes:

Bioregions are geographic areas having common characteristics of soil, watersheds, climate, and native plants and animals that exist within the whole planetary biosphere as unique and intrinsic contributive parts.

(Berg, 1991, p. 6)

In line with Berg's biophysical description, bioregions have sometimes been defined in very specific and explicit terms. Maps of bioregions have been proposed across the globe, for example, One Earth delineates 185 global bioregions (Burkart, 2020) while some jurisdictions, like the Commonwealth of Australia, have institutionalised the practice of bioregional identification, specifying methodologies (Thackway & Cresswell, 1995) that divide the continent into 89 specific bioregions and 419 subregions from which to manage landscape-level environmental health (DCCEEW, 2023; Geology Australia, 2023).

Many civic bioregional movements around the world appear to interpret the scale of bioregions in a similarly larger-than-local way. To some practitioners, the regional scale of bioregions is central to the concept (e.g. Brewer, 2021; Wahl, 2006, 2016). Regional scales can help to 'bring coherence' to human–nature dynamics by finding points of near-closure in ecological systems and encouraging the re-design of social systems to align with these patterns. This approach to scale gives 'bioregions' a utility that differs from sustainability programmes pursuing collective action around spatial frames of individual, household, townships and other political demarcations (such as provincial, state or national boundaries).

Other thinkers have been more ambivalent about 'where to draw the lines', positioning bioregions not just as human interpretations of the land, but also as subjective and cultural constructs. In this frame, bioregions are, in part, defined by the identity of the human societies that inhabit the area, and the knowledge of the territory that they bring (Berg & Dasmann, 1977). This perspective is often paired with a normative assumption that local interpretations of the landscape mirror regional biophysical patterns. For example, when finalising bioregional boundaries, Berg and Dasmann (1977, p. 399) refer to considering 'terrains of consciousness', and more recently, Ryan (2012, p. 85) calls for bioregional proponents to consider 'the body of thoughts that have developed about how to live in that locale'. The implication is that human resources are guides to sustainable ways of being.

These considerations might appear clear-sighted; however, the inclusion of cultural norms and practices opens the door to a wide variety of perspectives about how a bioregion ought to be identified, and what life there ought to look like. For example, Bedouin traditions could be expected to offer markedly different

perspectives and spatial implications on how to live sustainably in the Arabian Desert when compared to the architects of Masdar City. Meanwhile, in a settler colonial context like Australia, European farming practices might define 'ways of living' in a locale that are seen as 'traditional' by some, an 'invasion' by others and be rated as enabling various degrees of sustainability; from feeding the world, through to destroying unique landscapes. There are a wide variety of movements pursuing local pathways to sustainable futures with sometimes starkly different visions, politics and theories of change.

3.3 | What does contemporary bioregional practice look like? And how relevant are its ideas as a contribution to sustainability?

This brief overview surfaces what we elaborate upon in Hubbard et al. (2023); a desktop review of the literature shows bioregionalism as a discourse that uses the concept of 'the bioregion' to engage questions of scale, governance and a collective sense of place in ways that are sometimes specific and sometimes fuzzy.

With more than 40 years of lineage, bioregional thought has seen various shifts in emphasis in the way it mobilises its concepts, and these expressions have attracted a range of important critiques. Early ontological tendencies (Hubbard et al., 2023) that call for regionally scaled action and acts of 'becoming native' (Berg & Dasmann, 1977) have been critiqued for taking indigenous concepts as inspiration but appropriating them into Western power structures and naturalising settler claims to place (Tuck & Yang, 2012; Wiebe, 2021). They have also been critiqued for their potential to foster deterministic perspectives about the connections between nature and culture that can be exclusionary and anti-cosmopolitan (Olsen, 2000). Meanwhile, critical tendencies that call for a focus on the power and flows between places (Hubbard et al., 2023; Plumwood, 2008) risk bioregional action becoming synonymous with an abstract and individualist 'lifestyle environmentalism' that overemphasises the role of individual consumption in systemic change and elides the importance of our emotional and material relationships with nature, and their potential role in supporting deep and transformative change (Hubbard et al., 2023; Huber, 2022).

A focus on place and context has also seen widespread attention in sustainability science, especially in the priorities of SES, sustainability transformations and HNC research. The integration of concepts and practices from sense of place, place shaping and futures studies have done much to explore individual places and social–ecological systems as 'niche' spaces for transformational interventions (e.g. Frantzeskaki et al., 2018; Horlings et al., 2020; Masterson et al., 2019) and place-based SES research, more broadly, has become an influential source for developing contextual insights for governance (Biggs et al., 2021; Norström et al., 2022).

SES research is rooted in transpatial ideas of nested systems (Gunderson & Holling, 2002) and concepts of telecoupling have invited

attention to flows between places, reflecting similar concerns to critical bioregionalists (Hull & Liu, 2018). Ontological bioregional tendencies are also reflected in recent calls in SES and HNC research to revisit the link between cultural and biological diversity, drawing on what Luisa Maffi (2005) termed 'biocultural diversity' to ask if (spatial) patterns in humanity's cultural and linguistic history might offer normative insights for deliberate initiatives in sociocultural change (Fernández-Llamazares, 2022; Hanspach et al., 2020). Despite this, practical efforts to consider regional scales while pursuing contextual nuance have surfaced difficulties and tensions in terms of ethics, epistemology and efficacy (Bennett, Morrison, et al., 2021; Norström et al., 2022).

In reviewing bioregional history, we identified the spatial unit of the 'bioregion' and its (sometimes) deliberate approach to regional scales as what made bioregional thought unique and sets it apart from place-based alternatives. It was puzzling to us that this conceptual foundation is being troubled and we wondered how bioregioning was engaging with this dynamic.

In order to explore these questions and to deepen our understanding of the politics, contestations and actions that define what bioregioning looks like in trans-place discourse, as well as our own local contexts, we sought to complement our desktop research by interviewing leading figures in the movement. The remainder of this paper documents our findings from these interviews. In doing so, we aim to provide an account of bioregioning, discuss its relationship to key issues and debates in sustainability and demonstrate how collaborative research projects might reflexively engage with an opaque discourse that transcends and includes the politics of specific places, experiences and histories.

4 | THE LANDSCAPE OF CONTEMPORARY BIOREGIONING

This section outlines the pertinent features of bioregioning that we identified about through reflexive analysis of interviews with contemporary bioregional thought leaders. Excerpts and quotes from interviews are integrated into the text. Our analysis (i) identifies three motivations that the concept of bioregions appears to serve, (ii) outlines how 'bioregioning' is engaging with scale in way that is fluid and cognisant of bioregional history and critiques and (iii) identifies a set of emerging strategies and practices that typify the movement.

After outlining these shared characteristics, we then discuss nuances in the discourse. Specifically, we identify bioregioning as a forum in which different voices emphasise different strategies and imaginaries, and discuss the influence of context in shaping these refractions.

4.1 | The *bioregion* as a tool for clarification and motivation

Bioregions are a really excellent way to remind people where they live and what the biophysical realities

of their world are...anything that gets us looking at the living world's capacity and loveliness first is okay by me.

We found that the concept of bioregions serves as an attractor to people, like us authors, who seek a rationale for change that addresses multiple dimensions of today's sustainability challenges. Respondents were consistent in presenting the bioregion as a concept that enables a biophysical categorisation of the landscape at regional scales. In this way, the bioregion remains relevant and connected to an argument for regional scales of environmental action. What we found more insightful, however, was the role which the concept of a bioregion plays in motivating action. Table 2 outlines three central motivators that we identified.

Here, rather than there being a singular motivator for drawing on the bioregion such as a belief that it is the only scale at which regenerative communities can 'take place' (Thayer, 2003), we found that contemporary perspectives find a mixture of pragmatic and ideological drivers from the concept of a bioregion. First, the concept serves to emphasise a discourse within sustainability that puts a focus on non-humans as important constituents in defining the goals of sustainable action; in short, a bioregional consciousness forms a basis for deep ecology politics. Second, conceptualising the Earth as a series of interdependent bioregional units persists in providing strategic clarity about how we might reimagine global patterns of consumption, trade and governance and the shifts required to get there. Third, and relatedly, the bioregion localises environmental agency and includes multiple modes of action. In doing so, it provides tangible opportunities for people to act and see themselves as meaningful agents of (regional) systems change in an era where much global discussion focuses on abstract concepts, overwhelming complexities and the need for leadership by a powerful elite.

4.2 | *Bioregioning* shifts bioregional thought towards engagement with its critiques

Despite clear and shared assertions about what bioregions were, and why they held utility, what immediately followed in conversation with contemporary leaders of bioregionalism was an agnosticism about how to use the frame of a bioregion in forums for collective action. This tendency points to the second clarification identified through the interviews; that the concept of bioregions sits separate to the practices of contemporary bioregional action. Supporting this clarification was a series of insights that point to an awareness and experience of tensions that have accompanied the politics of bioregionalism in the past.

First, there was a strong agnosticism towards bioregionalism being the appropriate label for the practices involved in what they considered as bioregional action. This reflected an awareness and open engagement with criticisms that bioregionalism has attracted in the past, particularly in regard to bioregionalism's relationship to non-Western ideas and settler colonial politics (Wiebe, 2021):

TABLE 2 How *bioregions* are conceived and the motivations the concept carries.

| Motivator | Why do bioregions matter? | Exemplar quotations |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A vision of the future that serves all species | Bioregions foreground nature. They inspire imaginaries of the future where humans and non-humans thrive in shared and locally resonant landscapes | <i>It really is mother nature's way of telling us about herself</i> <i>What if we flip it and think about, what if the river had voice and had perspective?</i> <i>What if the sky and the climate system and the water system, and the forest, so the voice of nature?</i> <i>And so for me, the core of the bioregional idea is what Gary Snyder called 'Reinhabitation', that process of us, as life, coming back home into the ecosystems that we are actually expressions of</i> |
| A narrative and rationale for change that feels strategic and logical across scales | Bioregions disaggregate complexity. The conceptual model of an interconnected patchwork of bioregions seems to help people grasp how change might occur across scales and complex systems | <i>It's about creating regenerative cultures that are mainly providing for themselves –plural, [and] that are mainly providing for themselves within bioregionally regenerative economies, but do so in a globally interlinked way</i> <i>The definition, for any species, is that it is the region in which the entire niche and all of its interdependent web is geographically located.... The human context includes biological evolution and cultural evolution. And so it adds this very interesting, like permeable aspect, that the material economy of that human bioregion includes whichever forms of cultural interchange</i> <i>For me, [a bioregion] gives the real biophysical context of a living system that is nested in other living systems</i> |
| An opportunity for tangible contributions and personal agency | Bioregions inspire agency. They justify a focus on local landscapes and in doing so, encourage local people to 'do things', creating space for participation that feels accessible and meaningful | <i>I think that bioregioning is not only a very human scale of organising ourselves, it also is a scale that gives us agency and agency is one of the things we really need right now. Because otherwise everyone kind of collapses into feeling helpless</i> <i>To think that we are in contact with the place, and with the people in a place, and the other species that inhabit that place gives you an understanding and an opportunity for thriving –thinking in a darkened room about the meaning of words does not</i> <i>Anything that gets us looking at the living world's capacity and loveliness first is okay by me</i> |

...a lot of these white men, Northern European, Northern American...they think that what they've invented is brand new. Their lack of humility in the face of very ancient civilizations is quite strange.

I'd say bioregionalism is similar to the permaculture movement in that there were people who discovered an old way of doing things, but they didn't know that.

it's really important to just say, we've been bioregional all along, like, it's not a new idea. It's a return to the pattern that actually worked to enable our species' evolution.

let's find words that resonate ... if there was a different word for it, I'd be wide open. It's not as if that's the right word, or the only word.

Second, interviewees noted a myriad of related difficulties from their experiences in pursuing change in practice. We found that when enacting a response to key motivators in the discourse, tensions and challenges arose in practice. Figure 1 illustrates our analysis of patterns and themes in the data; specific experiences (in exemplar quotations) often demonstrate multiple types of tension, and tensions often relate to more than one motivator for action.

4.3 | A global bioregioning movement shares some practices—and attitudes—towards change

While Figure 1 indicates tensions, it also provides some insights into how change is being pursued. First, contemporary bioregional action appears to share a focus on communities co-creating (or re-creating) clarity about their regional setting as part of a collective social learning process. Rather than accepting bioregions as predefined units, a process of agreeing on a bioregion's identity engages participants to learn about biophysical and human histories of the region and develop a sense of place. This leads to some communities defining their field of action around a waterway, and others a more 'textbook' biophysical region. It is here that the sentiments—and references—towards 'bioregioning' become explicit (Hubbard et al., 2023). One interviewee addressed this shift directly:

...[a] key transformation that I've seen is in terms of language – of 'bioregioning', rather than 'bioregionalism'. ...[isms] can have a long shelf life in the research ecosystem but... people are just exhausted by these definitional discourses.

'Bioregioning' as a deliberative and explorative mode of action highlights the importance of raising tensions and engaging with them, but without giving up on the original motivating goals of a more than human ethical agenda, a scientific rationale or

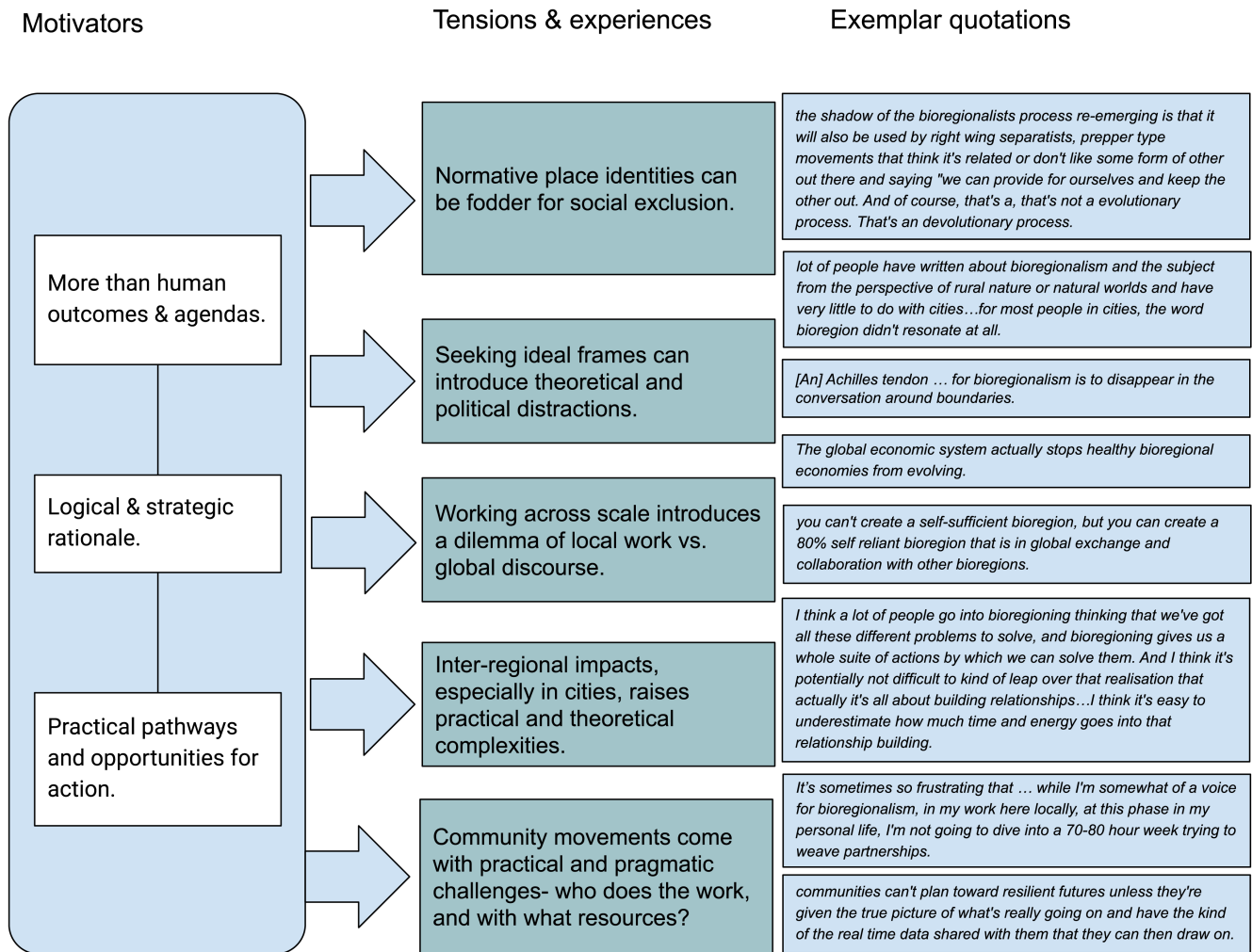


FIGURE 1 Tensions that relate to practical experiences of pursuing more than human ethics, a strategic approach to change, and accessible forms of action that were raised by interviewees.

strategy behind initiatives, and enabling accessible forms of agency. [Table 3](#) outlines some key ways in which we heard tensions are being tackled. Overall, there appears to be a softening of the logic that seeks regional scale change as an immediate priority, and an openness to experimental, contextually specific change. Biophysical regions appear to remain important; however, the field of potential practices that are useful spans sensitising people to nature (in general) through to a wide variety of environmental action. The practice of bioregioning thus creates space for, and shows signs of, much overlap and dialogue with various place-based processes and practices. This includes a range of work being explored in SES research, HNC studies and their integration with concepts such as sense of place (Masterson et al., 2019; Tuan, 1977), place shaping (Horlings et al., 2020) and transformative learning (Grenni et al., 2020); as well as a shift in sustainability science that identifies the value of contextualised knowledge co-creation as a key epistemic source for informing sustainability (Caniglia et al., 2021; Fazey et al., 2020; Wyborn et al., 2020).

4.4 | A forum for diverse and different narratives

Thus far, our findings have focused on the features that define a shared discourse in contemporary bioregioning. This addresses our initial questions of understanding the landscape of contemporary bioregioning; however, it does little to address our questions of how bioregioning is being expressed differently across geographies and why.

Locating ourselves and the agents we spoke to in the context of space and time helped to understand a deeper and more subjective dimension to the positions that we observed in the data, and dive below the surface of what was said by whom.

4.5 | 'What's needed here and now?' Different imaginaries of the present and narratives about the future

The most obvious differentiator between the narratives we observed arose from how people perceive today's socio-environmental

TABLE 3 Salient features of contemporary bioregional action (*bioregioning*) raised in interviews with leading practitioners and thinkers.

| Emerging practice in bioregioning | Exemplar quotations |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pursuing a more than human ethical agenda while being pragmatic about entry point | <i>we do not care [about emphasising the bioregion as the site of action] we just want you to have a think about nature first</i> |
| A commitment to regional experiments, not a generalised theory of change | <i>we need to accept that this work is very, it's not a roadmap, it's not 'give me the recipe of how to do bioregionalism and then export it everywhere in the world'. It's a subtle dancing with the system</i> |
| Balancing the need for agency with action at (strategically) meaningful scales | <i>I think that bioregioning is not only a very human scale of organising ourselves, it also is a scale that gives us agency and agency is one of the things we really need right now. Because otherwise everyone kind of collapses into feeling helpless</i> <i>I think it's more than anything else it's saying we have never been here before in terms of climate change, and how we exist on the earth. The most intelligent thing to do is to ask questions, ask good questions, ask better questions, find what the right thing is to us. And then say, well, we are all in the learning process</i> |
| Leaning towards action, instead of abstraction | <i>I would always add, if it drives action. If it's just something to think about, if it's just something to generate a good conversation, to me, that's not enough. Bioregionalism has to drive action, it has to drive some sort of 'do'</i> |
| Learning as part of the process | <i>if it's not about actually sitting down with your feet in the grass going, which little bees live here, what kind of soils do they need to live? What are we doing to this place? You know, then...then I'm not as interested</i> <i>the learning journeys are so powerful as a tool to go in and see and learn how to experience a good learning journey, you are out there, spending a little time planting trees, and somewhere you are spending a little time at a soup kitchen, you are spending a little time working with a local soccer club that has indigenous and immigrant communities together. You're seeing into a system, you are asking questions that then can lead to action. That action really is about the kind of change that's comin</i> |

crises. How respondents framed the present shaped their conclusions about what is possible, what is needed and what types of action should be prioritised. They drew forth the presence of different 'social imaginaries' within the data, which describe how people 'see, sense, think and dream about the world and, in the context of social change, how they envision making changes in that world' (Riedy & Waddock, 2022, p. 2).¹ Figure 2 reflects three generalised positions that we encountered.

The first imaginary identifies our position in time as still being within the Holocene. From this perspective, pursuing bioregioning was associated with practices that seek to restore Holocene conditions, focusing on 'native' species and regenerating 'traditional' socio-ecological systems. A second perspective drew on concepts like the Anthropocene and saw little hope for restoration, but fell short of resignation. From this viewpoint, the emphasis for action was placed on local adaptations and resilience in ways that drew more on systemic connections between locations and across scales. The final perspective described our present context as having already entered a state of socio-ecological collapse. In this framing, priorities in bioregioning become akin to establishing place-based experiments to support survival for an unknown future.

These perspectives surface how vastly different political and ethical implications arise from how we view the present, letting bioregioning justify very different narratives about how we should respond. If we tend towards resignation about the certainty of climate collapse, then the politics of the Anthropocene (and perhaps all of human history) become topics for a former chapter; specific

places, then, become the building blocks for experiments in future survival. In contrast, where agents believe that some degree of restoration is possible, the ethics and value of supporting socio-ecological heritage appear to be strengthened as a motivator, often to the point of obligation and a sense of duty.

While noticing these patterns in the data, we sought to contextualise and understand their origins. To do so, we found that reflexive discussion among the experiences of us authors helped to draw forth empathy for the interviewees, and the different perspectives that they presented. This aspect of our analysis highlighted a second influence that we identify—the spatially contextualised experience that we encounter as individuals.

For example, in the context of Australia, there was a shared view among local authors of this paper and respondents which emphasised that concerns for social justice, the ethics of an ongoing extinction crisis and the politics of place identity are often enmeshed and intractable issues. Here, a form of bioregioning that focuses on such salient and urgent local issues seems far more relevant and important than preparations for a future civilisation as raised by other respondents.

Uncovering these perspectives helped us to appreciate how bioregional concepts appear to 'travel' over space and time and are mediated by our perspectives. While ethical, strategic and agency-related motivators remain central to the overall appeal of bioregioning, there are a range of contextually specific and subjectively mediated expressions that are being pursued in practice. On reflection, we suggest that priorities in bioregioning tend to reflect the socio-ecological contexts of different places where it is being practiced, and the perceptions of the individual that resides there. Put simply, what is accessible, relevant and useful differs based on our experiences and contexts and how we process those exposures.

¹See also Gabrys and Yusoff (2012) and Kagan (2019) for discussions of (social) imaginaries and sustainability.

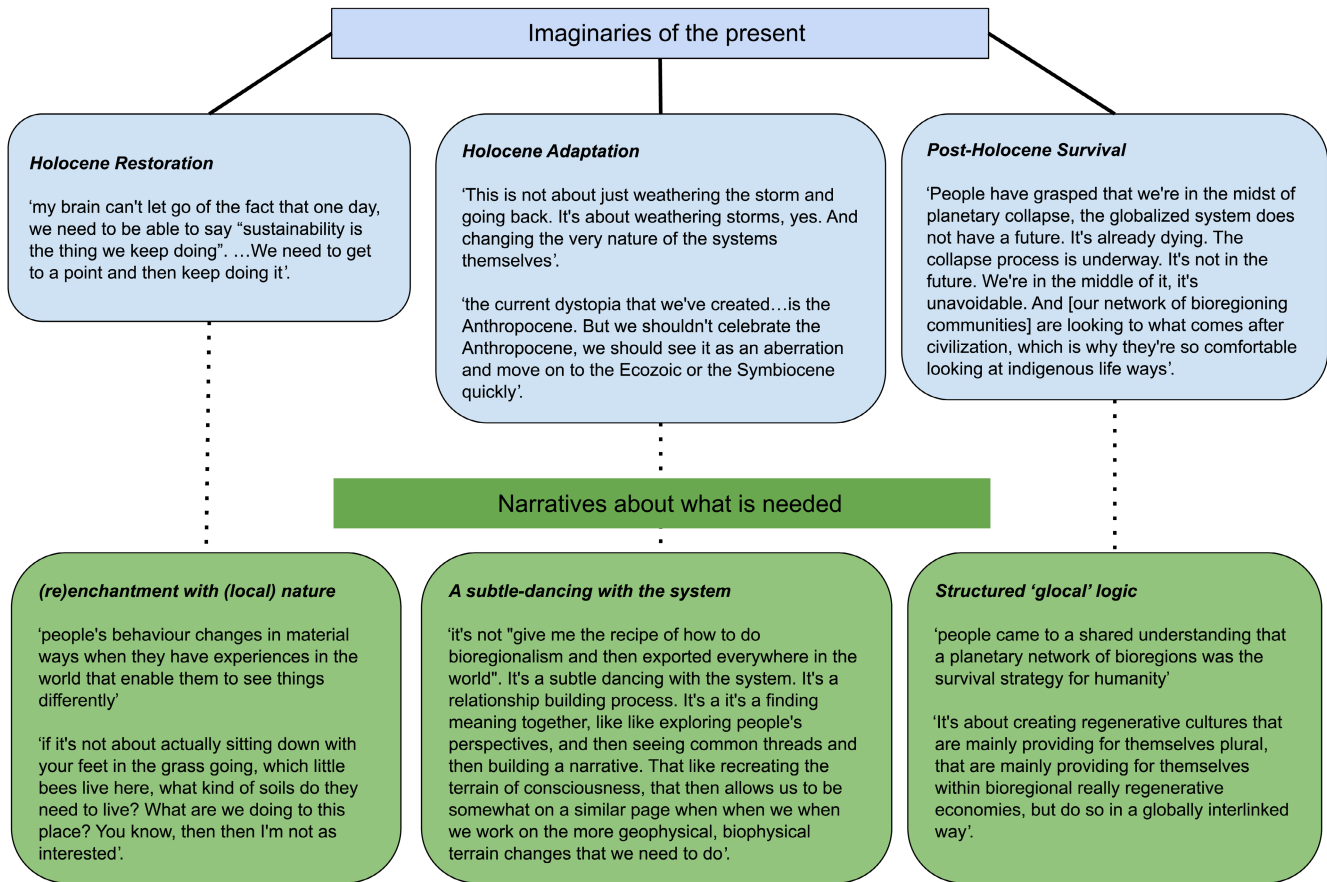


FIGURE 2 Excerpts from interviews showing how people framed their understanding of the present with coherent conclusions about the kinds of action that are needed. There were three general positions that were raised.

4.6 | Summing up: A patterning of shared priorities defines contemporary bioregioning

Change agents, we suggest, inherently want to know 'what kind of work is needed, here, and now?' The answers that we arrive at appear to depend on how we see ourselves in the context of socio-ecological space and time. Across the cohort we talked to, bioregioning is an attractive discourse for people seeking a sustainable future that enables more-than-human flourishing, adopts a strategic approach to change and responds to the need for people to feel agency and 'do' something. We also observed that different perceptions and beliefs could be traced to temporal and spatial factors as well as subjective and deliberative processes of assessing what we face and rationalising our response. In other words, your imaginary of your particular bioregion seems to impact the bioregioning that you do.

Despite these differences, we found that bioregioning, as a trans-place discourse for deliberate change towards sustainable futures, tends to call for certain types of change, and brings a particular axiology to the politics of sustainability. It is the caveats that go with this central discourse, which are emphasised differently by different agents, that opens it up to its various directions and expressions. All agents engaged with the motivators that we have highlighted, but to

different extents that were patterned by the context and perspectives of the speaker:

- All referenced ideas of ecological literacy—but there were differences about what ecological stewardship looks like in the context of global change.
- All were attracted to a rationally structured and strategic approach to action—but there were different priorities when it came to facilitating global networks or pursuing locally emergent responses.
- All were attracted and committed to finding personally and locally resonant ways to experience emancipatory and deliberate change—but there were different levels of concern that the politics of bioregioning might attract unsavoury bedfellows who see bioregionalism as a pathway towards ethno-nationalism and exclusion.
- There were also different levels of concern about whether bioregionalism—as a trans-place movement—was useful or distracting, and whether any global movement might carry the politics of 'power over' rather than enabling the 'power to'.

Overall, where bioregionalism was once seen as a form of top-down localisation, bioregioning appears to pluralise the movement, tending towards endogenous and emergent processes. By focusing on the process, bioregioning seems to become more ethical,

surfacing a conscious engagement with tensions and critiques that bioregional thought has previously attracted in relation to power and social justice. In doing so, we identify it as a case study of contemporary social action that draws attention to relational hybrids of space–time, scale–action, logic–emotion and ontology–epistemology. It seems to mirror a range of questions, tensions and shifts that are occurring more broadly in sustainability.

5 | REFLECTIONS AND DISCUSSION

The final section of this paper reflects on our findings and the process of our research to explore and situate our findings within broader trends in sustainability. We then offer a short summary of the tensions, hopes and opportunities we see bioregioning offering to sustainability research and practice.

5.1 | A case for contextualised mindsets and productive misunderstandings

This paper stemmed from the initial challenge of speaking to each other as researchers and practitioners about bioregional thought. We found that each of us came with a different understanding of what bioregions and bioregionalism were, and each of us saw a different utility in this body of thought. We found, first hand, that trying to engage in discourses about concepts proved to be complex and somewhat fraught due to the contextualised position that had shaped our respective ways of thinking, politics and interpretation of the terms.

In the process of undertaking interviews, our discussions drew forth insights and reflections about the fears, hopes and concerns about the world that drive many change agents to do their work. We noted that while a semi-detached analysis of semantic patterns in the transcripts might produce an academically acceptable outcome, we felt a duty to show more care and reciprocity to the respondents and the nuance within their positions. We found ourselves drawing on relational values as a fulcrum in how we approached the research.

Collaborative and reflexive thematic analysis, we found, encouraged us to share our own experiences as we discussed patterns in the data. This engaged our empathy for respondents but also helped us to deepen our insights into the latent meanings in the interview data, creating space to triangulate our own experiences with those of our respondents and recognise points of departure. During this process, we made decisions about how to communicate our research and in doing so, evaluate which kinds of meaning were most valuable. For example, we found that linguistic frames were present in the definitions used by respondents that pointed to the motivations that we have discussed: a normative frame presented an imaginary of regional social-ecological systems as a goal to be pursued (example 1), a scientific frame emphasised the intent to categorise and logically interpret the Earth

as a series of containers (example 2) and an emotive frame focused on individual experiences and feelings that are generated from the landscape (example 3).

so it's kind of region within which human beings can meaningfully...integrate their patterns as living as part of nature, into the regenerative pattern that runs through evolution.

(example 1)

it's a biological region. So the definition for any species is that it is the region in which the entire niche and all of its interdependent web is geographically located.

(example 2)

if you're in it [the bioregion], you know that you're in it and you know you belong to it if you live there, and it has a kind of its own identity, which gives you an identity at the same time.

(example 3)

However, we decided that framing our observations solely through linguistic evidence masked the reflexive nature of our analysis. Decisions to anonymise the quotations, and transparently raise our own reflections made us more comfortable with the process of knowledge creation and more confident in the results.

There is a parallel in this experience with what we observed about bioregioning. In every interview, participants drew upon their own positionality as a way of explaining how they interpreted core concepts of the 'bioregion' and 'bioregionalism'. They pointed to the process of actively engaging questions about where we are and what work needs to be done as more important than universally coherent definitions and abstractions. While decontextualised ideas about what a bioregion is and how a boundary might be drawn were present and of interest, there was an acceptance that different understandings would be reinterpreted in place and context specific ways:

At least choose a boundary. But decide why you're choosing that boundary that has both, sort of, the opportunities of 'this was why it makes sense' but also the challenges of what you're giving up by selecting this boundary.

We're here to live in the region together. And we have to find a narrative that holds different perspectives, but finds the higher ground to allow us to basically get through the eye of the needle in the middle of an extinction emergency.

This dialogue between contextual and de-contextualised knowledge was present throughout the discourse about bioregioning we encountered (Figure 3). Ensuring that while pursuing global issues, the

(i) Contextual and subjective exchange

Sustainability challenges and solutions were contextually patterned – despite this, different individuals contextualise ideas and experiences differently, leading to productive deliberation and experimentation within place-based bioregioning communities.

(ii) De-contextualised exchange across places

As a global discourse, *bioregioning* also abstracts experiences through inter-place exchange on the assumption of shared foundations. We experienced that bioregional concepts were acting as 'boundary objects', inviting an exchange of subjective and contextualised experiences which were, in turn, re-interpreted and re-contextualised.

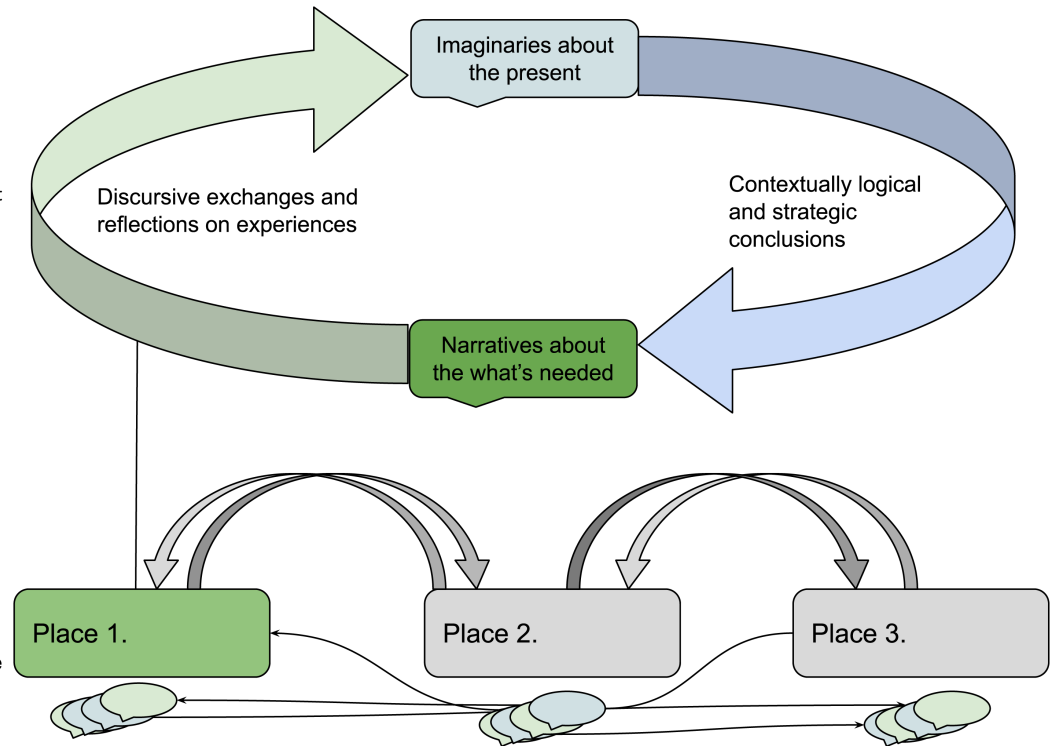


FIGURE 3 Bioregioning today centres on the creation of forums for logical and contextual responses, as well as exchange and reflection. These forums exist within specific places, but also between them. Instead of these exchanges seeking a reductionistic process of knowledge creation, practitioners in bioregioning appear to adopt relational perspectives and facilitate diversity from contextualised exchanges.

contextual nature of knowledge, values and politics are not lost is more than a trivial endeavour. In its current form, bioregioning appears to traverse this tension and, in doing so, creates space for bioregional ideas to be (re)explored in ways that resist becoming synonymous with isolationist eco-local action on the one hand, or a localisation of 'global best practice' on the other.

Reflecting on these patterns, we suggest that in bioregioning, concepts such as the bioregion now act openly as boundary concepts (Star, 2010; Star & Griesemer, 1989). Doing so sees them facilitate deliberation within local areas and between them. Across these exchanges, plural (mis)understandings, we suggest, are useful by creating a shared space for people to work together, often without consensus, about how best to define a space for action and discuss strategies for change. The capacious nature of bioregional concepts allows people to move between broad ideas that can be translated across different contexts, to critical discussions of their suitability and form a basis for structured thinking about how change might be pursued.

Meanwhile, in the knowledge production process of our research project, we found that adopting relational values shaped research decisions in ways that went beyond standard academic ethics processes. This enabled an insightful learning process that helped us manage the tension of dissensus but also enabled us to uncover multiple forms of meaning—knowledge that emerged from the data, and

knowledge that emerged from the process of analysing it. A lesson for practitioners and researchers alike, we suggest, is that if relational values matter, success lies within the process, not just the specific outcomes of the research process.

The use of dialogue in bioregioning and reflexivity in the process of our research both identified value in maintaining an awareness of abstract concepts (like regional scales of action and reflexive thematic analysis) but also saw value in remaining open to how these general concepts might be used in adaptive and contextually appropriate ways. Drawing on knowledge in this way is, we think, similar to what Donella Meadows (2001) referred to as 'dancing with systems' and enacts a mode of action that is inherently relational but resists institutionalisation.

5.2 | A symptom of the times: Bioregioning and the 'relational turn'

There's a broader context to our research experience and the features of contemporary bioregioning that we outlined in this paper's introduction. Western sustainability discourse has, in the past, tended to participate in the epistemological and ontological hallmarks of modernity in how it approaches change: separating concepts from context, and employing a reductionist epistemology to

identify best practice, that can be translocated and applied en masse.² A large body of theoretical and diagnostic literature in sustainability science has argued that for sustainable futures to be realised, Western culture needs to overcome some core tendencies; moving from reductionism, dualism and anthropocentrism towards more than human ethics and ways of thinking that elevate our entangled interdependence with non-humans, and by exploring more pluralistic approaches to knowledge (Abson et al., 2017; Berzonsky & Moser, 2017; Kagan, 2019; O'Brien, 2018; White et al., 2018; Wyborn et al., 2020).

In response, place-specific approaches to sustainability are prominent in the emerging 'relational turn' in sustainability science (Hakkarainen et al., 2022; Stålhammar & Thorén, 2019; West et al., 2020) and the pursuit of a relational paradigm is unearthing a variety of new approaches in sustainability that respond to global issues through specific places and deliver sociocultural change as well as direct environmental outcomes (Chan et al., 2016; Masterson et al., 2019; Norström et al., 2022; Pereira et al., 2020, 2021; Wyborn et al., 2020).

Bioregioning, we believe, is itself an outcome of interested parties bringing relational perspectives to bioregionalism's core ideas.³ In doing so, we suggest it exemplifies an interesting and emerging discourse in sustainability that seeks to maintain the core tendencies of Western scientific rationalism while creating spaces for recalibration in response to its critiques. There are three features to this endeavour. First, our investigation showed that a core priority in bioregioning is to decentre humans and enact more-than-human concerns as a key motivator for action. This engages relational values (like stewardship, duty and care) and relational mindsets in how we engage with both human and non-human co-inhabitants as constituents of change.

Second, bioregioning, as we encountered it, enacts a practice-based and dialogical mode of action. Through contextualised exchanges coupled with inter-place dialogue, bioregioning appears to encourage a fluid and emergent approach to knowledge that re-connects knowledge to context. Importantly however, it also appears to be balancing contextualised pathways to knowledge with knowledge that is derived from abstractions and de-contextualisation via inter-place exchange. This points to a form of knowledge creation that is both hybridising, and dualist, in how it relates ontology to epistemology. Further research might seek to distinguish the influence of contextual knowledge versus relational knowledge that both seem to be present in this dynamic (Eyster et al., 2023) and there are parallels in the way bioregional concepts appear to serve usefully as boundary objects to the way Fischer and Riechers (2019) see a 'leverage points' perspective (and other heuristics)

²While sustainability science has been typified as having both localising and generalising traditions (MacGillivray & Franklin, 2015), many have noted that power has tended towards the latter in recent decades (e.g. see Dryzek, 2022; Orr, 2002; or MacGillivray, 2015).

³This parallels the movement towards understanding the commons via the practices of commoning (Linebaugh, 2008) that constitute the commons, rather than the commons themselves.

as productive for the study and pursuit of sustainability transformations due to similarly capacious capacities.

Third, its emphasis on the bioregion is an ontologising tendency that tends to frame sustainability challenges and solutions in a way that enables the above positions, and invites a process of reflexive and productive dialogue about the appropriate action for 'here and now'. In doing so, we find that bioregioning generates approaches to sustainability that capture diverse imaginaries of the future, but which are rooted in a logical appreciation of one's position in time and space. This pluralises the possible expressions of sustainability across the diversity of socio-ecological landscapes on Earth. In doing so, it invites action on topics of culture and connection alongside politics and regenerative action.

Collectively, the features outlined above position contemporary bioregioning as one answer not just to sustainability issues but as a body of activities that show efforts are being made to enact the calls for a relational paradigm.

5.3 | Bioregioning and its prospects: Tensions, hopes and opportunities

Our research began after recognising we held plural (mis)understandings about a seemingly established concept. Our goal was not to find a single definition of 'bioregions' or 'bioregionalism'. Instead, we sought to understand how its use and interpretation varied across places. What we actually found was more interesting—contemporary bioregionalism (now expressed as bioregioning) can be refracted into spatial and temporal dimensions that are in an ongoing state of change through contextualised experimentation and de-contextualised exchange.

By focusing on these refractions, we believe bioregioning is demonstrative that relational values and mindsets are being adopted 'in the wild' as part of an emerging discourse in sustainability that seeks to respond to long-established critiques in contemporary environmental literature. In doing so, it carries normative visions for the future, enacts the call for more than human ethics and prioritises opportunities for action. Taking our findings forward, there are several points of interest that present compelling opportunities for sustainability research and practitioners.

First, engaging with place and context in this research required us to adopt relational mindsets. Over the course of our study, we contextualised and recontextualised our individual understandings many times, moving continually between the specific and the abstract. It took significant labour to appreciate how and why we each interpreted ideas differently, demonstrating what it takes to speak across different places, disciplinary contexts and lived experiences. For us, the journey of unpacking bioregioning highlighted the vast benefits of reflexive, discursive and experiential forms of knowledge creation.

Second, the concept of a bioregion appears to be helping centre sustainability conversations on tangible contexts. Supporting communities to learn and discuss dilemmas about how to live in the areas

they inhabit generates a responsibility to include everyone (human and non-human), or at least become aware of absences and exclusions. Doing so can provide an opportunity to engage with questions of power, social and ecological justice, rather than elide them. Approached in this way, bioregioning might provide an entryway for democratic and just pathways to sustainability.

Third, as a discourse in sustainability, bioregionalism has long presented a case for the conscious re-ordering of humanity towards regionally governed social-ecological systems. We found that when expressed as 'bioregioning', contemporary bioregional discourse retains a connection and interest in the logic of regional scales, but it positions this as separate (and subservient) to an ethical and co-created process for change. This brings the practice of bioregioning into closer dialogue with a variety of place-based concepts and practices. In our view, the shift is a mature response to bioregional history and an attunement to the ethics that any political action carries when considered critically and in specific contexts.

Finally, while relational approaches to sustainability can carry much hope and interest for sustainability research, they are inevitably imbued with their own latent and explicit politics. Bioregioning is not the only, and definitely not the first, pathway to enact relational values, and pursuing social-ecological patterns in how humanity lives on Earth is far from new (e.g. Maffi, 2005). Indeed, our literature review highlighted that bioregionalism has a chequered history in its engagement with Indigenous worldviews and practices (Hubbard et al., 2023; Wiebe, 2021). As we see it, bioregioning will continue to carry risks. It might be used to disempower decolonial alternatives, overlooking social injustices in pursuit of environmental sustainability and its references to abstract systems theory can sometimes appear like vehicles to subtly (re)introduce spiritualism into science. While today's bioregioning appears able to confront such tensions more deliberately than earlier expressions, power dynamics between a Westernised discourse of bioregioning and similar decolonial alternatives remains an important topic for critical discussion and debate.

However, the same tendencies which raise risks also present opportunities. They can resensitise new communities of humanity to nature, make the Modern world feel larger, richer and intrinsically interdependent, and could extend the horizons of Western science. We feel there are important roles for research and practitioners to further engage with the philosophical foundations, narratives and imaginaries that make bioregioning (and similar 'systems') discourses appealing and the tensions this might surface.

This paper is not calling for one definition of bioregioning, nor does it offer a singular theory of change. As one respondent put it, instead of pursuing a playbook, bioregioning is a 'subtle dancing with the system' (referencing Meadows, 2001) and is best pursued by the process of open, brave and contextually nuanced discussions and experiments that are based on social-ecological literacy and robust, critical debate. In its current open, and potentially fragile, re-interpretation, we remain on the fence: Bioregioning could become an antidote, a doorway, a forum and a risk—depending on the context

and those involved. A tendency to ask questions and engage in debate, rather than present firm answers and solutions is a promising practice to maintain.

AUTHOR CONTRIBUTIONS

Samuel Wearne and Ella Hubbard led the conceptualisation and design of the study; collection and analysis of the data; and the writing of the manuscript. Krisztina Jónás and Maria Wilke assisted in the data collection and reflexive analysis process. All authors contributed critically to the drafts and gave final approval for publication.

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CONFLICT OF INTEREST STATEMENT

None.

DATA AVAILABILITY STATEMENT

Data sources for this study are not available due to ethical considerations for research participants.

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