

Riverkin: Seizing the moment to remake vital relations in the United Kingdom and beyond

Joshua B. Cohen^{1,2}  | Charles Dannreuther²  | Markus Fraundorfer²  |
Colin Mackie³ | Julia Martin-Ortega¹  | Anna Mdee²  | Nicolas Salazar Sutil⁴

¹School of Earth and Environment, Faculty of the Environment, University of Leeds, Leeds, UK

²School of Politics and International Studies, University of Leeds, Leeds, UK

³School of Law, University of Leeds, Leeds, UK

⁴Editor, Minority Rights Group International

Correspondence

Joshua B. Cohen

Email: j.b.cohen@leeds.ac.uk

Funding information

The Interdisciplinary Research and Impact Fund for Culture at Leeds Arts & Humanities Research Institute; The School of Politics and International Studies' Strategic Research Investment Fund; UK Natural Environment Research Council, Grant/Award Number: NE/P011160/1; water@leeds

Handling Editor: Russell Hitchings

Abstract

1. We show how the dire state of the Earth's rivers entangles intimately with 'thingifying' processes at the heart of colonial modernity. Known in many precolonial and Indigenous contexts as person-like *kin*, we describe how rivers the world over have been re-done primarily as *thing*—amoral, controllable, a potential commodity like anything else.
2. We develop and work with a provisory concept of kin as *those constituents of environments that reciprocally nurture, and contribute to the substance of, one another's life and wellbeing*.
3. We show how kinship with rivers figures centrally in primarily Indigenous-led struggles in various regions of the globe for the recognition and enforcement of river personhood and rights. This is partly because people are motivated to fight passionately for their kin.
4. With some careful caveats, we argue that associating river kinship exclusively with Indigenous worlds undermines its potential for global impact. Thus, as an apposite case study, the latter part of the paper focuses on some of the social-ecological trends which we suggest are opening up the possibility for the re-establishment of 'riverkinship' in the United Kingdom.
5. We reflect on the potential for riverkinship to help cultivate political constellations fitting to the challenges of the Anthropocene.

KEYWORDS

Anthropocene, global north, kin, rivers, thingification, the United Kingdom

1 | INTRODUCTION

Rivers have been drawing media attention recently, mostly for all the wrong reasons (e.g. Austin, 2021; Barkham, 2021; Begg, 2021; Bullough, 2022; Laville, 2021a, 2021b; Laville & Horton, 2023; Monbiot, 2022; Westfall, 2021). Pollution, damming, climate

change and other pressures mean that only a third of the world's rivers remain free-flowing (Grill et al., 2019). Since 1970, global migratory fish populations have dropped 76%, freshwater vertebrate populations 83% (Deinet et al., 2020). Freshwater habitats are the worst affected over the last 50 years within a global mass extinction event where 68% of mammals, birds, fish and reptiles have

This is an open access article under the terms of the [Creative Commons Attribution](https://creativecommons.org/licenses/by/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2023 The Authors. *People and Nature* published by John Wiley & Sons Ltd on behalf of British Ecological Society.

been lost (Almond et al., 2020; IPBES, 2019), along with over 85% of global wetland area (IPBES, 2019). According to one influential analysis, we have already crossed four of nine mutually interacting 'planetary boundaries' (Lade et al., 2019). Once such boundaries are sufficiently transgressed, ecological systems may no longer maintain Earth within the relatively stable conditions of the Holocene conditions which are linked to the development of large-scale, settled social-political forms (Lade et al., 2019, p. 119; O'Neill et al., 2018; Rockström et al., 2009).

Note: Given the plurality of ways of knowing and relating discussed below, we acknowledge that 'river' can never be *one* thing. It is nevertheless a powerful concept for focusing attention on what we are primarily interested in here—that is, waters' confluent, flowing state as part of the freshwater cycles that all lives are part of.

1.1 | Overview of our argument

Part of the reason for our precarious situation is the long history of transformations in human relationships to freshwater. This has been a process whereby overriding economic, technological and philosophical logics have privileged relating to waters as *things* over forms of *kin*. Understanding that history as processes whereby historically particular and local ways of knowing and doing became globally dominant, suggests other possibilities, including moving away from what we characterize as the *derangement of relationship* with our 'riverkin'^{1,2} entailed by this history. Kinship with waters has figured centrally in the vital, primarily Indigenous-led struggles for the recognition of the life, agency, voice and or personhood of rivers in New Zealand, Australia, Canada and elsewhere (Maniakuakishtiku et al., 2021; Martuwarra RiverOfLife et al., 2021; Nixon, 2021; Strang, 2021; Wooltorton, 2021). This marks an important potential inflection point in how humanity relates to the nonhuman world, although its transformative potential will necessarily be curtailed if kinship with waters is associated *solely* with Indigenous worlds. Once again privileging relating to rivers as kin also in the very centres of colonial modernity might allow a fuller, more radical seizing of this moment. Offering the example of the United Kingdom, the literature explored here suggests that this proposition might not be quite as strange and improbable as it could first appear. We do not suggest that simply recognizing this kinship as a 'nice idea' will be enough on its own to transform our treatment of rivers. We argue that it would constitute a step in the right direction towards the formulation of political constellations fitting to the challenges of the Anthropocene.

1.2 | The Anthropocene concept

From the Greek for 'man' and 'new', the term 'Anthropocene' is widely used to describe the current geological epoch in which humans have come to significantly influence global ecosystems

(Prillaman, 2022). The term has been well critiqued, commonly for being too generalizing, as if all humans have played an equal role in creating our perilous situation (Hayman et al., 2018). Hence, terms like 'Capitalocene' and 'Plantationocene' have been proposed (Hara-way, 2015; Moore, 2017). We stick with Anthropocene because it is a term most people will be familiar with, and because of the distinct lack of charm of the 'Thingocene'.

1.3 | From kin to thing

How we know, relate to and value water is deeply interwoven with human beings' relationships with one another and the planet. Many scholars (e.g. Bird-David, 1999, 2020; Ingold, 2000; Kohn, 2007, 2013; Strang, 2004, 2014b, 2015; Viveiros De Castro, 1998), including those with family and other heritage ties to such ways of life (e.g. Borrows, 2016; Donald, 2009; Kopenawa & Albert, 2013; Little Bear, 2012; Salmón, 2000, 2015; Watts, 2013, 2020), argue that for many hunters and gatherers and subsistence farmers, living through a world they depend on but cannot control to any significant degree, 'nature' often figures as differing forms of personhood to be engaged with in mutualistic terms. Because in such ontologies, personhood—as a relational phenomenon that speaks of agency and intention—is not limited to the human, neither are various kinds of relation which might be preserved for human beings in a typified 'Western' context. Enrique Salmón, Indigenous Tarahumara from Chihuahua Mexico, for example, argues that such worlds are founded on what he terms a 'kincentric ecology,' in '[which people are part] of an extended ecological family that shares ancestry and origins ... an awareness that life in any environment is viable only when humans view the life surrounding them as kin' (Salmón, 2000, p. 1332). As in many of the examples cited above (e.g. Bird-David, 2020; Kopenawa & Albert, 2013), this conveys a diffuse, rhizomatic sense of kinship, constituted by the multifaceted, ongoing broad field of relations through which people, places, plants, waters, animals and various kinds of ancestor bring one another into being as social-physical entities. Such forms of kinship, those beyond immediate human relations, were long categorized by anthropologists and others as 'fictive'—that is, not *really* real (Ingold, 2000, p. 109). Critiquing this assumed rational superiority of what he refers to as the 'genealogical model' of kinship, Ingold makes the point that in other kinship models, such as those of the hunting and gathering Nayaka of Tamil Nadu, India.

the role of parents is not, as the genealogical model implies, to pass on to their offspring the essential specifications of personhood in advance of their entry into the lifeworld, but rather—by their presence, their activities and the nurturance they provide—to establish the necessary conditions in the environment for their children's growth and development. *This is what kinship is all about.* (Our emphasis, Ingold, 2000, pp. 140–141).

There is no reason, therefore, for 'fictive' kinship relations to be any less real than those which exist between human parents and their children. In this perspective, *kin are those constituents of environments that reciprocally nurture, and contribute to the substance of, one another's life and wellbeing*. Importantly, kinship is not simply given in the singular acts of conception and birth; instead they derive their worth and meaning through an ongoing, embodied, practical kind of cultivation (Ingold, 2000, p. 144).

With its associations with life of all kinds, water has commonly been central to such relational webs. Mirroring their shimmering movement-in-transformation, perhaps the most common figure such waters have taken has been the *snake*. From the shape-shifting *waterslang* in Southern Africa, to horned serpents in North America, Europe and Scandinavia, they speak of a living, agential world where water is less something to be possessed and subject to human will, and more someone with whom it is necessary to maintain a reciprocal relationship in order to thrive as bio-social persons (Cohen, 2020; Green, 2020; Strang, 2014b, 2015; Toussaint et al., 2005). 'Kin-making', Donna Haraway writes, 'is making persons, not necessarily as individuals or as humans' (Haraway, 2015, p. 161).

At the same time, the capricious character of many water beings does not suggest a world free of danger or fear—neither in the human nor the nonhuman³ world. It does suggest a world where morality extends in an unbroken way beyond human relations. So while avoiding any undue romanticization, we suggest that it is very much worthwhile recognizing that such ways of relating to waters (and the rivers they take form as) are associated with ways of life that in many instances have persisted for millennia without destroying the ecological bases for human and nonhuman life (Brightman & Lewis, 2017; Fitzhugh et al., 2019; Gowdy, 2020; Green, 2020; Strang, 2015).

Strang argues that as hunting and small-scale agricultural modes of egalitarian sociality have been progressively replaced by more hierarchical forms, and as waters have been increasingly controlled through canalization and so on, waters' character in social imaginaries has also tended to change (Strang, 2014b, 2015). Mutualistic relations with water beings have tended to be replaced by gods in human form in increasingly hierarchical relationship to humans, as the agency and personhood of water itself has diminished (Strang, 2014b, 2015). While Graeber and Wengrow (2021) have convincingly challenged the equations *settled agriculture and city life (necessarily) = hierarchy* and *hunting and gathering (necessarily) = equality*, Strang's point that the perceived passivity of water reaches a kind of zenith through the scientific and industrial revolutions of the 17th to 19th centuries still holds (Strang, 2014a, 2014b, 2015).

The development of technologies and sciences during this period rendered humans and environments countable and knowable at increasingly large scales (Ball et al., 2012; Bowler, 2000; Foucault, 1970, 2007; Higgs, 2001; Scott, 1998). Interwoven with such practical means, newly dominant mechanistic philosophies seemed to offer European elites the key to finally master nature, to

turn it to human politics and industry—both in Europe and in rapidly expanding colonial networks (Césaire, 1972; Delbourgo, 2008; Gottschalk, 2013; Grove, 1996; Reidy & Rozwadowski, 2014).

In works of the likes of Descartes, Newton and Galileo, the way to true knowledge was:

... to look for what is evident ('present to eye's gaze'); reduce it to as many parts as possible; order and enumerate those parts; and then put them together again as a long chain of inference ... [in this way] ... the ideas of modernist thought which undergirded coloniality were of a world made of things connected only by their presence in space, from which they were extractable to whatever extent was humanly possible. *Life* and ecological *relations* were incidental and optional extras... (Our emphasis, Green, 2020, p. 40)

Succinctly put, this is what Aimé Césaire has referred to as the 'thingification' of the world at the heart of coloniality. Underpinning the absolute division between nature and culture in Latour's 'Modern Constitution', here we note that colonizers construed kinship beyond the human as a cultural construct *projected* on to a world of pure matter (Césaire, 1972; Latour, 1993a). This is also essentially the metaphysical parallel to the commodity form central to the development of our current global political economy; the foundational gesture underpinning neoclassical economics' notion of value (Gómez-Baggethun et al., 2010; Screpanti & Zamagni, 2005). That is, that *everything* and *anything* can in principle be exchanged for *anything* else through the magical medium of money. All other social entanglements become (imagined to be) secondary or irrelevant (Harvey, 2017; Marx, 2007).

It was within these technological, philosophical, political and economic processes, that what Linton has referred to as 'modern water' emerged (Hamlin, 2000; Illich, 1985; Linton, 2010). Linton argues that while Euro-Greek philosophical currents have for millennia conceived of water in both local, animistic *and* generalizable, naturalistic terms, it is with the invention of 'modern water' that *exclusively* generalizable naturalistic accounts—culminating in 1811 in the formula H_2O —became considered as *proper* knowledge. Linton argues that reconceiving water as value free, disconnected from all human entanglements, achieved, in reality, the opposite. Modern water—mappable, eminently controllable, a potential commodity like *anything* else—did not dissolve human relations from water. Rather it cultivated new forms of relation, articulated through new infrastructures, while (not coincidentally) corresponding with the aims of imperial European states: economic expansion and 'civilizing' missions at home and abroad (Linton, 2010).

When such ways of relating to the world met collectivities whose primary forms of knowledge and valuation lay in acknowledging and attempting to work synergistically with webs of relationship that sustain all lives, the former, time and again, destroyed the latter (Escobar, 1995; Gordon, 1992; Luxemburg & Bukharin, 1972; McIntosh, 2004; Penn, 2005). Landscapes' *watery* constituents—rivers,

lakes, streams—reckoned as pure matter, imagined only in terms of their physical relationships after their human relations had been removed, could, with little moral consideration, be turned to the satisfaction of exclusively human wants and needs, often to the interests of the market. As leisure landscape, canalized transport and repository of human and industrial waste (Gilmartin, 1994; Green, 2020; Hartley, 1964; MacDowall, 1994; Martin-Ortega et al., 2019).

As Moore (2015) and Collis (2016) might put it, rivers became part of the 'biotariat'; their life processes giving 'free' surplus value to capitalist processes, in the same way that the unpaid part of human labour does (Moore, 2017). So, while rivers provided a small percentage of the world's human population with the conditions for their own development and spectacular thriving, this became an increasingly one-way relationship. People's sense of kinship with water withered, deprived of the ongoing reciprocal efforts, considerations and practices that are any relationship's life-source. In this light, we might say that our ecological situation derives as much from a *derangement of relationship* as anything else (cf. Ghosh, 2016; Kessler, 2019). This began apace during the period of the industrial revolution in Europe and its colonies, but such thingified patterns of knowing, relating to and valuing water are today very much ongoing and powerful, intimately tied to rivers' dire ecological states. They are expressed in the fourth principle of the 1992 Dublin Statement on Water and Sustainable Development, which states that 'Managing water as an *economic good* is an important way of achieving efficient and equitable use' (Our emphasis, Theodore & Dupont, 2020, p. 402).

This principle is a core building block in Integrated Water Resource Management (IWRM) which has become the dominant concept of global water governance, guiding all major action on water governance locally, regionally, nationally and globally (Ofori & Mdee, 2020)—with IWRM codified as part of the Sustainable Development Goals, target 6.5 (United Nations, 2018, p. 75). Thingified patterns of knowing, relating to and valuing are expressed when mining companies bet the economic costs of maintaining tailings dams against the socio-ecological consequences of ageing structures spilling heavily contaminated water into the Doce River watershed, Brazil (Borges & Maso, 2017; do Carmo et al., 2017; Fernandes et al., 2016). Zooming out to the global scale, they are expressed in influential 'Ecosystem Services' (ES) frameworks that assume the purpose of the nonhuman world is to satisfy human need, ascribing a monetary price for services rendered (Comberty et al., 2015; Gómez-Baggethun et al., 2010).

Of course, it is possible to point to the positive obverse of such historical processes: food security, disease reduction and rising living standards for billions (Pinker, 2018; Rosling, 2019; Shahzad et al., 2017). While we in no way deny such potential and actual benefits, we would point out that aside from disastrous impacts on the nonhuman world, (1) Indigenous and other lives decimated across the planet are an impossibly high price to pay; (2) what 'living standards' actually means for human flourishing is highly contested (Graeber & Wengrow, 2021; Mathews & Izquierdo, 2008; McGregor, 2018); and (3) the political economic context within which science and

technology have advanced means that, without profound change in that context, such (unequally shared gains) are likely to be very short lived for many. In most cases, this is likely to be a matter of one or two generations before they are undone by climate change, pandemics, war and economic volatility (Olaberria & Reinhart, 2022; Oxfam International, 2022; World Bank Group, 2022).

1.4 | Colonial modernity's nightmare scenario as an opening to other possibilities

If, through the means of thingification, colonial modernity's ultimate dream has been total mastery over 'nature', coupled with a future-oriented trajectory of development and progress, then it seems fair to say that we are entering into its nightmare scenario. Apocalyptic ecological devastations and planetary boundaries transgressed threaten to undermine the ability of the planet to sustain the very kinds of settled, hierarchical human social forms that colonial modernity exists as (Gowdy, 2020; Hussain & Riede, 2020; Lade et al., 2019; Mattison et al., 2016; O'Neill et al., 2018). In response, in the form of increasingly extreme weather, flooding and droughts, water asserts its uncontrollable agency. Worse still, there is no place left in that thin sliver of Earth we call home that can even be imagined to be free from human presence and influence.

How can culture exert control over nature when the condition required for the latter to exist can no longer be found? One response has been a doubling down on methods of measurement and control at ever greater scales and complexity within the same, expanding political economy (Espinoza & Aronczyk, 2021; Iberdrola, 2021; Liu, 2020; Milojevic-Dupont & Creutzig, 2021). This is part of a broader agenda to datarize and render *everything* predictable and profitable, from the workings of our oesophagi to 'the whole planet' (Zuboff, 2019, p. 208). Data can always be a powerful ally, and we need rigorous, engaged research of many kinds to understand the task in front of us. We also recognize that systems thinking, Science and Technology Studies and pushes towards transdisciplinary research, among other shifts, have in many important ways transformed 20th and 21st century environmental scientific practice and theory (Capra & Luisi, 2014; Kelly et al., 2018; Kuhn, 1996; Latour, 1993a). Yet, if we are being forced to accept that mastery of nature, of water, is an illusion, and a fundamental part of the problem, then a breaking of the spell is required, asking of us much more radical forms of thinking and action (cf. Stengers & Pignarre, 2011). What might modes of relating to, knowing, and valuing water look like in a 21st century that does not destroy the biosphere upon which we all depend?

In several regions of the globe, one possible answer to this question is being formed by movements largely spearheaded by formerly colonized peoples whose worlds have been undone by processes of thingification outlined above (Gentry, 2015; Kahui & Richards, 2014; Kirmayer et al., 2011; Reid et al., 2014). After sketching out some of the important dimensions of these movements, we go on to discuss possible lessons and resonances for the United Kingdom.

1.5 | Kin over thing once more?

On 16 February 2021, Quebec's Muteshekau-shipu ('Magpie River') became the latest in a series of rivers to be granted legal personhood—including, in 2017, the Whanganui River in Aotearoa (New Zealand) (Nixon, 2021; Strang, 2021), in 2016, the Atrato River in Colombia, and in 2019, *all* rivers in Bangladesh (Eckstein et al., 2019). With rights of nature initiatives currently in place in at least 39 countries (Putzer et al., 2022), campaigns for river personhood are part of a wider global trend—often related to Indigenous struggles—to recognize and grant rights to 'nature' in general (Eckstein et al., 2019; Hall, 2011; O'Donnell, 2017). The overall conception is that just as, over recent centuries, inalienable rights have been extended to an increasingly inclusive range of human kinds, there is no reason, apart from cultural prejudice, that comparable rights should not be extended to nonhumans (Boyd, 2017; Stone, 2010). The hope is that valuing plants, rivers, animals, mountains and so on not because of their use as resources for the servicing of human needs and wants, but because of their inherent sovereign existence, might render them less vulnerable to the depredations of human society—a task that existing legal frameworks which typically treat the natural world as forms of human property, have very often proved themselves incapable of achieving (Boyd, 2017).

Such moves have been read as a potentially productive way that 'modern' legal structures might speak to and uphold Indigenous worldviews in which rivers and the constituents of 'nature' more generally, are literal living persons (Strang, 2021).

Werry writes:

The Bill recognizes in law the genealogy that makes Whanganui *iwi* [Māori kin collectives] and river kin, and affirms a concept of well-being in which the spiritual and physical health of people and river are interdependent. (Werry, 2019, p. 2)

Of course, conferring rights on the world is no guarantee that such rights will be upheld. Reading the UN's (1948) Universal Declaration of Human Rights' 30 articles in light of the last 70 years of world history, is not a cheering experience (un.org, 2021). The implementation and enforcement of rivers' legal rights has often produced, overall, fairly ambiguous results. In the Whanganui case, some signs are emerging of the potentially positive value of legally considering the river as kin, 'an indivisible whole ... from the mountains to the sea' (Ngā Tāngata Tiaki, 2021). This includes the river, through its human *iwi*, having more say in the redevelopment of the Whanganui Port (Ellis, 2022). On the other hand, conferring rights of nature can also risk sidestepping structural power questions such as human access to and ownership of land (Coombes, 2020, 2021). Considering that control over land in one way or the other runs to the basic heart of so many issues of inequality, poverty and ecosystem destruction across the formerly colonized world (e.g. Crow, 2022; Francis & Webster, 2019), this is something any Rights of Nature advocate should keep in mind. Also, legal personhood was conferred

on Ganges and Yamuna rivers, India, with seemingly little thought for the practicable means through which this status might actually affect how these polluted rivers are treated (Bowes et al., 2020; Eckstein et al., 2019). All in all, such realities echo more longstanding human rights-based approaches to addressing injustice—effective for building legal grounds against powerful interests, but not for challenging wider political economic structures (e.g. Fassbender & Traisbach, 2019; Meissner, 2021).

Not discounting the gains to be made from a rights-based approach, another, more radical potential of this trend might lie in a wider shift in relationship between human beings and planet that it cultivates and provokes. This is because it constitutes the most serious and widespread attempt since the constitution of colonial modernity to incorporate Indigenous ecological ways of knowing, relating and valuing into national and international environmental governance; and because it does so on a conceptual basis that if taken to its logical conclusion undermines a central tenet upon which our global political economy is constructed—that the world is fundamentally thing, not kin.

1.6 | Rivers as kin in the United Kingdom

It may perhaps be easier to imagine a shift to something like a 'kin-centric river ecology' in contexts with more immediate connections to precolonial worlds with active, locally rooted Indigenous movements. We argue, however, that the need for such radical changes is perhaps even more pressing in the industrialized Global North where notions of kinship with rivers might seem abstract, 'exotic':

1. Because of the dire socio-ecological state of many rivers in such places (Deinet et al., 2020).
2. Because it is the rich nations that have a determining say in global water policy.
3. Because it is precisely the naturalization of 'thingified' understandings of water, and the estrangement of water kinship, that we believe needs to be unsettled.

Acting as means of transport, power source and drainage for the global imperial, industrializing power of the 18th to 19th centuries, the rivers of the United Kingdom were particularly adversely affected by industrialization (Allen, 2009; Clapp, 1994; Gomersall, 2000; Mathias, 2013; McTominey, 2017, 2020; Rosenthal, 2014). While localized deindustrialization and regulation have since improved water quality, especially in previously industrialized rivers, serious problems remain. Ninety-seven per cent of the UK's river network is fragmented by human interventions (Jones et al., 2019). This undermines biodiversity, and especially under conditions of climate change, raises the risks of flooding (Adger et al., 2016; Alam, 2020; Berry, 2017). Recent Environment Agency (EA) figures show that just 14% of English rivers are of 'good ecological standard' [or close to their natural state]. For the first time, all English rivers failed to meet pollution limits, in large measure due to industrial, agricultural

and domestic wastes pouring into them (Laville, 2020), related to government having slashed two thirds of financial support for pollution measures since 2010 (Bullough, 2022; Laville, 2021a). Unfortunately, the situation could easily get worse as the post-Brexit government appears unwilling to guarantee EU-linked water pollution standards (Laville, 2023).

Within a national water governance context where water is treated primarily as a commodity (Bayliss et al., 2020; Loftus et al., 2019), all of this makes the United Kingdom an apposite illustrative example of a Global North country that might benefit from learning to again recognize and cultivate kinship with its rivers. Fortunately, existing literatures do point to long-standing counter-currents in the ways people relate to, know and value 'nature' within the United Kingdom. This suggests that foundations for a push towards something like this may already exist. While other taxonomies could be drawn up, other literatures included, we tease out four, very much interconnected strands that we see as significant in relation to this proposal. These involve: (1) studies of 'water beings' in the history of water-human relationships; (2) explorations of people's engagements with waters and wellbeing; (3) various aspects of nature-based solutions; and (4) rights of nature campaigns.

1.7 | Water beings

Recent interpretations of prehistoric archaeological materials found in the United Kingdom suggest that people inhabited animist worlds—not entirely dissimilar to extant Indigenous ontologies—where human beings recognized an inherent kinship with the world (e.g. Johnston, 2020; Jones, 2020). The large number of British Neolithic rock art sites with sinuous, concentric circle or zig zag forms have been interpreted as rocky reflections of watery ripples and movement. These are often spatially associated with rivers, (Beckensall, 2002; Haughey, 2009), as are stone circles (Strang, 2004), possibly suggesting modes of interacting with and propitiating these worldly riverine agencies (Fowler, 2021). Collections of food vessels and quartz at certain sites have been interpreted as part of the maintenance of mutualistic relations with nonhuman personhoods (Wallis, 2009). We cannot know the degree to which such interpretations reflect the projection of contemporary concerns on to the past. What is clearer is that when Romans began arriving in the sixth decade BC:

'Britannia' was still inhabited by Celtic tribes who combined hunting and gathering with low-key agricultural trade and ... worshipped water beings and conducted propitiatory rituals at thousands of sacred water sites across the British landscape. (Strang, 2015, p. 12)

As Romans sought to control water on a large scale as a key part of their occupying control over the landscape, so did modes of relating to water necessarily change. In time, sites associated with water beings were appropriated and named after Christian saints,

with 'pagan' practices explicitly banned in 391 (Strang, 2015, p. 12). When Christianity became increasingly hegemonic after the Norman conquest in 1066, the country faced a plague of monstrous water 'worms', old English for snake or dragon, needing to be slain by Christian warriors—the new order demonizing and destroying the natives' water kin along with their worlds. Despite a thousand years of Christianity and later the dominance of mechanistic versions of science, folklorists and others who scoured the countryside in the 19th and early 20th centuries encountered stories of all kinds of personhoods associated with waters, some of which persist in living memory. These include fairies and banshees (McDonough, 2019), 'Jenny Greenteeth' (Simpson & Roud, 2000), sea-spirits (Teit, 1918), water worms (Strang, 2015) and 'knowing' waters (Ditchfield, 1896, p. 105). Today, echoes of pre-Roman animist water beings persist in place names, including 'Holywells' all over the country—which Strang argues point to the Christian appropriation of sites connected to Celtic water serpents (Strang, 2015); Old Father Thames (Bord & Bord, 1986; Wood, 2020); the river Dee, named after the goddess Deva (Knight, 1998); and the Trent Bore linked to an Old Norse deity (Wood, 2020). There are also rituals like well-dressing, traced by some scholars to pre-Roman propitiation of water deities. Well-dressing is a community event where water wells are celebrated and decorated in flowers and other colourful materials (Shirley, 2017).

Such phenomena mix in complex ways with rehabilitations of pagan ritual and nature consciousness that began in the early 19th century, largely in response to the socio-ecological deprivations of the industrial revolution (Hutton, 2019). Accurate estimates of numbers of Pagans, Wiccans and other nature spiritualities in the United Kingdom are hard to come by, but can range from 50,000 up to 200,000, and are normally accepted as growing in number, as reflected in the 2021 census (Booth, García, et al., 2022; Strang, 2015). There is a large academic literature on their origins, practices and conceptual worlds (e.g. Cusack, 2012; Greenwood, 2020a, 2020b; Hutton, 2013, 2019), as well as any number of popular how-to guides and online resources (e.g. #Pagan, paganfed.org; Aldag, 2020; Conway, 2019; Eason, 2013; Forest, 2020; MacEowen, 2002). Rivers and other waters feature centrally in both of these literatures as places where watery personhoods can be encountered as the embodiment of a universal flow constituting the radical interconnection of all things within animate ecologies. Indeed, as Rountree writes 'Love for and kinship with nature' is the first principle of the Pagan Federation (Rountree, 2012, p. 305). The long-running magazine *Quest* 'contains material on magic, witchcraft and practical occultism'. In a 2020 issue, Wood⁴ asks, in reference to the United Kingdom, 'Can we decolonize and re-indigenize ourselves, and re-establish a respectful, responsible relationship with our river kin?'

Nature spiritualities overlap with various environmental movements, many of which are animist in outlook (Cianchi, 2015; Taylor, 2009). Water often plays a foundational role as concept and phenomenon in many religions practiced in the United Kingdom (Russo and Smith, 2013; Serafino, 2020). There are, for example, contemporary Christian groups influenced by the 13th century mystic philosophy of Francis of Assisi who preached of the fellowship of

all things, of 'Mother Earth' and of 'sister water' (stg-stj.org.uk, 2020; franciscancompanionsofthecross.co.uk). Spirituality and river-kinship will likely be associated in many more ways than we have space to articulate here—including, perhaps, in the work of scientists (Sheldrake, 2017).

Before moving on, we want to note that at a time when populist politics in the United Kingdom and many other places are recapitulating the kinds of ancestral, exclusivist place-belonging once promoted by colonial and fascist political orders, we are very much alive to the risks of describing in a positive light these kinds of kinship relations to waters. While there may be those in Pagan or other nature spiritual movements in the United Kingdom that hold to landscape kinship as expressing some kind of national (white?) belonging, we would emphasize the notion of kinship described by Ingold, above. Fundamentally antithetical to genealogical models of being that undergird nationalism and racism, these are, to quote ourselves above, 'diffuse, rhizomatic senses of kinship, constituted by the multifaceted, ongoing broad field of relations through which people, places, plants, waters, animals and various kinds of ancestor bring one another into being as social-physical entities.' If we mention water beings, practices, and philosophies with long associations with 'the United Kingdom' these are as potential, possibly locally resonant filaments that might be woven by the full diversity of ways people know, relate to and value waters into ongoing, plural, changing tapestries of kinship. Such tapestries must make sense in a 21st century world whose nonhuman agencies in some ways recall pre-modern eras, but whose social-economic-political-ecological conditions are very different.

2 | WATERY PRACTICES AND WELLBEING

As part of a wider research trend in nature-based health (Djohari et al., 2018; Kellert & Wilson, 1993; Lackey et al., 2019; Louv, 2008), disciplines as diverse as anthropology and planning have become increasingly interested in how urban and rural 'bluespace'—or visible surface waters—intersects with, and might better cultivate, human wellbeing (Foley et al., 2019). Although dealing with generally more secular contexts and framings than nature spiritualities, there is certainly some blurring and overlap here, where kin or kin-like relations emerge in 'even' the most seemingly prosaic of people's interactions with water. Recent studies have looked at ways in which angling (Djohari et al., 2018; Mordue & Wilson, 2022), kayaking (Thompson & Wilkie, 2020), swimming (Denton & Aranda, 2020; England, 2017; Foley, 2015, 2017; Thompson & Wilkie, 2020), holy wells (Foley, 2011, 2013), scuba diving (Straughan, 2012), the beach (Ashbullby et al., 2013) and living closer to the coast (Garrett et al., 2019) are positively associated with greater senses of positive self-identity and wellbeing—albeit that such benefits are often unequally shared across the UK's class and race hierarchies (Pitt, 2018). In some of these studies, practitioners actively express feelings of kinship, such as when an angler expresses sadness upon the death of a favourite, aged fish named 'Quasimodo' (Mordue & Wilson, 2022, p. 6). We

would contend that where rivers end and fish start is not a simple or settled question. Such everyday, practical ways of relating to waters make of people who they are, and vice versa. It is really almost no step at all from here to the claim that water bodies are kin in the sense, proposed above, of being '*those constituents of environments that reciprocally nurture, and contribute to the substance of, one another's life and wellbeing*'.

This kind of work generates an important evidence-based counterpoint to government and private utilities' treatment of the UK's waterways (Bullough, 2022). As others have touched on, a concern to (at least be being seen to) care for people's wellbeing can be a good way to garner local governmental support and bring expanded human-nonhuman socialities into political arenas (Mordue & Wilson, 2022). Such work also lends support to campaigns for safe water access such as the high profile Ilkley Clean River Campaign which in 2020 won bathing water status for the Wharfe River in Yorkshire. This was the first UK river to be granted this status, followed in early 2022 by Wolvercote Mill Stream, Oxfordshire (Thames Water, 2022). More may follow in the near future (Laville, 2021c; Vaughan & Yeomans, 2023).

Some studies, particularly in anthropology, cultural geography and related disciplines draw on forms of non-representational theory to think through the processes that engender the vital affective relations that people feel for the waters that make life worth living (e.g. Djohari et al., 2018; Watson, 2019a, 2019b). Watson (2019a, 2019b), for example, shows how the 'vital materiality' of the ponds and lido of Hampstead Heath stir up passionate bonds in those who regularly immerse their bodies in them, playing an active role in the constitution of social and political constellations. When local authorities plan to dam and privatize these waters, swimmers are moved to take action. One of Watson's interlocutors explains that

You can't recreate it ... it will always make me feel better. So for that reason it is personal so when somebody says we want to do something to the lido or there's anything that they might want to change ..., then I react because I want to save it. (Watson, 2019b, p. 969)

Working with the Water and Integrated Local Delivery (WILD) project on the river Churn, Phillips and Lyon explore how volunteering to practically care for rivers is key in cultivating what they term 'eco-social healing' (Phillips & Lyons, 2019). Across the United Kingdom, such volunteer organizations, often couched in the language of kinship (e.g. 'Friends of the River ...', 'Adopt a ...') play a core role in river care and advocacy, especially as the state increasingly cuts funds to the EA (Clinch, 2021; Friends of the River Dean, 2022; Friends of the River Frome, 2022; UK Rivers Network, 2013). Thinking with Felix Guattari's (2000) concept of the 'three ecologies', Phillips and Lyons show how such work, physically exercising with purpose in sensorial environments with others engaged in similar activity, can generate wellbeing on individual, social and environmental registers (Phillips & Lyons, 2019; see their website hydocitizenship.com).

3 | NATURE-BASED SOLUTIONS

While definitions of 'nature-based solutions (NBSs)' vary across the literature (Barciela-Rial et al., 2020), and can blur with concepts like close-to-river techniques (Woo, 2020), a core idea is that instead of seeking to artificially *control* nature, we should be working *with* its processes as much as possible. Recent years have seen increased interest from governments, conservation organizations and other agencies in NBSs as ways of responding to socio-ecological challenges (Bark et al., 2021). This very often relates to freshwater biodiversity loss, pollution, flooding and drought (Acreman et al., 2021; Anderson et al., 2021; Giordano et al., 2020, 2021; Kiedrzyńska et al., 2021; Turkelboom et al., 2021). NBS is a concept developed and promoted by two influential European-based organizations—the International Union for Conservation of Nature (IUCN) and the European Commission (Bridgewater, 2018). In the United Kingdom, NBSs are built into the 25 Year Environment Plan (HM Government, 2018), and seem to have, at least in the case of Natural Flood Management, some popular support—if not sufficient allocated funds (Bark et al., 2021). NBS approaches this might mean: 'renaturalizing' rivers as a way to generate multiple social-ecological benefits such as biodiversity and leisure and reconnecting people affectively with riverscapes (Bell et al., 2021), or reconnecting rivers to floodplains and other landscape features as a way of mitigating flood risk in place of hard infrastructures (Wilkinson et al., 2019). Taking the approach further, Gary Brierley proposes 'a more-than-human approach to living with living rivers ... applying a river rights framework that conceptualizes rivers as sentient entities' (Brierley, 2019, p. viii).

Overall, NBS and related approaches present a rich body of evidence and experience of relevant, practical ways of working with rivers, which in important ways move away from water as a thing to be controlled, to water as a kind of agential ally. This can point to what can work, and where serious challenges may lie, such as deeply engrained private property regimes (Bark et al., 2021) and the inherent unpredictabilities of working with natural processes (Seddon et al., 2020). However, it is common in NBS literature to think in terms of NBS' *benefits to society* (e.g. Di Grazia et al., 2021; Gómez Martín et al., 2020; Lin et al., 2020; Midgley et al., 2021; Rizzo et al., 2020; Symmank et al., 2020). This is also apparent in NBS policy, being defined for example by the European Commission as 'solutions for addressing societal challenges... that ... simultaneously provide environmental, social and economic benefits and help build resilience' (Giordano et al., 2020, p. 2). In such framings, nature and rivers are not a *part of* society but are there for human benefit in an instrumental ES mode—and indeed these two concepts very often go together (e.g. Albert et al., 2019; Di Grazia et al., 2021; Gkiatas et al., 2021; Jakubínský et al., 2021; Kaiser et al., 2021; Rizzo et al., 2020; Symmank et al., 2020; Terêncio et al., 2021; Turkelboom et al., 2021; Wilkinson et al., 2019).

Recent years have seen attempts to nuance what 'ES' might mean. For example, The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, also a strong proponent of

NBS, includes relational values as a core component in its Conceptual Framework (IPBES CF) (Díaz, Demissew, Carabias, et al., 2015; Díaz, Demissew, Joly, et al., 2015; IPBES, 2019). This reflects a growing interest in relational values in environmental management literature (Admiraal et al., 2017; Arias-Arévalo et al., 2017; Gould et al., 2014; Gould & Lincoln, 2017; Himes & Muraca, 2018; Kaiser et al., 2021).

In the IPBES CF, the incorporation of relational values marks a conscious effort to depart from the dominance of instrumental, economic and monetary forms of valuation in ES towards more pluralistic models where, for example, 'living in harmony with ... Mother Earth' can in itself be understood as part of what makes a good life (Díaz, Demissew, Carabias, et al., 2015, p. 13). This is part of a commitment within IPBES to recognize and work with Indigenous and other ways of relating and knowing 'in which', for example, 'certain places, water bodies, forests ... are imbued with ancestral and divine ... significance' (Díaz, Demissew, Carabias, et al., 2015, p. 9). In all but word this means kinship with the nonhuman world, and indeed elsewhere in the literature, such kinship is explicitly referenced as a subset of relational values (Gould et al., 2014, p. 580).

Our position, however, deviates from IPBES in at least three ways. First, where it renders Indigenous knowledge, and the relational values associated with it, as by definition 'context specific perspective[s]' rather than being more widely and generally applicable (IPBES, 2019, p. 3). This, despite the fact that Indigenous ideas underpin many of the key tools now used in the humanities and social sciences for understanding the precarious, interconnected 'non-modern' world we live in (e.g. Haraway, 2015; Ingold, 2000; Latour, 1993a; Morton, 2016; Tsing, 2015). Our problem here is not that we believe there should be an Indigenous knowledge free-for-all where elites from the Global North can take and do with it what they will. We recognize with Watts (2013) and Todd (2016) the centrality and *specificity* of *place* often associated with such ways of knowing and relating. Rather, we are uneasy with the sense that something such as kinship with the nonhuman world necessarily derives from and somehow belongs in the periphery, the traditional—precisely the ideological and geographical spaces ascribed to indigeneity by the leading edges of colonial modernity (Boonzaier & Sharp, 1988; Fanon, 2007; Latour & Porter, 2010; Shepherd & Robins, 2008; Weaver, 2000). Second, in the IPBES CF, 'ancestral significance' is framed as just one legitimate way among others of valuing the nonhuman world—appropriate in one situation, just as ascribing monetary value to it might be in another (Díaz, Demissew, Carabias, et al., 2015, p. 11). Given the devastating histories associated with the thingification of the world, and the vast flows of capital and established political and legal structures that this form of valuation can tap in to the moment it comes into being, this is not an equivocation we are prepared to make. On the other hand, fundamentally undoing established nature-as-human-property legal structures might go some way to shifting the terms of this debate (cf. Brierley, 2019, above). Third, if water really is our kin, then we cannot support any idea that humanity, like some spoilt child, should be served up benefits without recognizing and nurturing water in return in appropriate and caring ways.

4 | RIGHTS OF NATURE

Although, as seen above, rights movements have been more visible and successful in places with strong Indigenous movements, this has started to change in Europe (e.g. Kalantzakos, 2017; Pentinat, 2020; Schimmöller, 2020; Schoukens, 2020). On 13 July 2022, campaigners secured legal personhood for Spain's Mar Menor lagoon—the first ecosystem in Europe to be granted such status (McLaren-Kennedy, 2022). In the United Kingdom, where Rights of Nature sentiment is certainly growing, it looks like the combination of citizen protest and a determined local councillor's frustration with water company inaction will soon lead to legal rights being conferred on the River Ouse (Kaminsky, 2023; on other similar campaigns see Kaminsky, 2021; Lampkin & Wyatt, 2020; Lawyers for Nature, 2021; Stockwell, 2022). Such success can only encourage further campaigns. Whether or not new legal frameworks will be enough to undo capitalist entanglements which have regularly unravelled the aims of rights of nature legislation in places like Ecuador, Bolivia and India, is of course extremely hard to say (Eckstein et al., 2019; Villavicencio Calzadilla & Kotzé, 2018). Indeed, considering its history of internal colonization by way of land enclosures, especially in the 18th and 19th centuries (Foster et al., 2021; Olwig, 2016; Thompson, 1991), concerns raised above in regards to other formerly colonized regions have much relevance here. Any rights conferred on nature could, for example, run the risk of sidestepping crucial structural power issues of who controls and has a say over and access to lands and their waters. This is perhaps especially relevant in England where land-ownership is shrouded in particularly thick legal and financial fog (Shrubsole, 2019).

Water governance in the United Kingdom is overall defined by privatization and property regimes, where human beings figure as owners of the nonhuman world around them. If we want to introduce into such contexts new ways of water 'governance' (recognizing that this is an inadequate word), where something like riverkinship is taken seriously, we will need to learn from Indigenous, Afro-Colombian and other struggles that have achieved some successes in moving towards a world less defined by this derangement of relationship. We note that, despite obvious historical and cultural differences, we might want to listen especially closely to Aotearoa New Zealand. Here there has accumulated more collective experience of subverting British-derived water law and policy (and comparable attendant social, cultural and ecological degradations) than maybe anywhere else (Hikuroa et al., 2021; Salmond et al., 2019, 2022). For example: how kin relations might be a more powerful, meaningful and sustainable way of proscribing certain river related behaviours than legalistic injunctions; or how to be alive to the risks of river rights becoming just another law rather than a linchpin for transformative human–river relationships (Hikuroa et al., 2021). On the latter point, 'decision-making structures based on strong values with specific mandates' seem to be key (ibid, 80). While there are many lessons to learn, one that seems especially apposite to the foregoing arguments and examples, and which is a constant across historical and cultural differences from Aotearoa to Colombia, is the basic

importance of the presence of human populations for whom *waters are kin*. It is through them that waters enter into political terrains in deeply felt and urgent forms.

4.1 | Concluding thoughts

Making of the world an infinite collection of things 'connected only by their presence in space' has proven to be spectacularly, terrifyingly successful (Green, 2020, p. 40). As humanity confronts the devastating consequences of that success, we search for ways of valuing, knowing and relating to the nonhuman world which might not destroy the biosphere upon which we all depend. Much inspiration has come from people and places where memory and practice live on of worlds not defined by the derangement of relationship that thingification represents. In the work of Indigenous scholars, anthropologists and others, these ways of knowing, valuing and relating are often expressed in the language of kin. Such 'kinship relations' drive passionate campaigns that in some ways have been successful in redefining how nation states relate to their nonhuman constituents. And yet, those complex assemblages of places, people, philosophies and technologies that have led the charge in thingifying the world, that have benefited most from it, are also those that bear the highest debts to people and planet. This means that at least as much as anywhere else, there is a pressing need for the assemblage called 'the United Kingdom'—to reimagine, and to cultivate anew, its relationships to its nonhuman constituents.

We find ourselves in a complex moment where quite different ways of responding to, understanding and treating 'nature' are in tension. On the one hand, insights from Indigenous worlds, and evidence in many disciplines, especially the ecological ones, has pushed us towards the recognition of the interdependence of processes from the geological to the atmospheric, to the (human) social. On the other hand, there are countervailing tendencies, supporting powerful interests, which tend to increasing abstraction and fragmentation, as in the datafication of the world, where data, and the elements of the world it stands in for, is now one of the most important global currencies (Zuboff, 2019). Things could go quite different ways—more thingification, more commodification or less, towards more genuinely sustainable relations—depending on our collective thoughts and actions at this moment. Hence the role for interventions like ours (as modest as it might be) in discursive spaces like this.

We do not pretend to possess any knowledge of what *exactly should* happen for a longer-term, genuinely sustainable alternative to be realized in the United Kingdom and elsewhere—this can only be worked out through ongoing campaigns which would no doubt gain more passionate impetus the more people feel and actively engage in riverkinship. However, it does seem that struggles need to aim beyond policy and law and strategize on the terrain of capital itself—that which has been core to the undoing of kinship with waters and the world. If we adopt Moore's/Collis' concept of the 'biotariat', then we suggest that opposing the logics of capital requires

committed forms of human–nonhuman solidarity between those whose ‘free gifts’ of life force are the basis for capital accumulation. Here, the partial successes of movements for the personhood of rivers, where kinship plays a key role in struggles as embodied vitalization, motivation and meaning, suggest that riverkin can be *active allies* in cultivating such new (old?) political–ecological constellations suited to the challenges of the Anthropocene. As Anna Krzywoszynska points out in relation to farming and soil care in the United Kingdom, ‘it is only when caring is more than the obligation of particular individuals, and becomes a systemic project, that the radical potential of attentiveness can be fulfilled’ (Krzywoszynska, 2019, p. 672). Such constellations could force the creation and *enforcement* of legislation and regulation as a good place to start—although clearly more radical transformations, including but not limited to water governance, are needed if capital is not to reassert itself at every opportunity. In this regard, we see a pressing need to creatively combine ecological solidarities with the resistive power that labour-based politics in the United Kingdom is cultivating once again (Booth, Elgot, et al., 2022; Middleton et al., 2023). After all, thingification involved social, political, economic and ontological redosings that stretched from minuscule atomic interactions, to water on Earth, to the far reaches of the universe.

AUTHOR CONTRIBUTIONS

Joshua Cohen led the search for relevant material and the writing of the original proof; and worked equally on the analysis of material, the conceptualization of ideas, and editing and reviewing manuscript drafts. Charles Dannreuther, Markus Fraundorfer, Colin Mackie, Julia Martin-Ortega, Anna Mdee and Nicolas Salazar Sutil worked equally on analysis of materials, conceptualization of ideas and editing and reviewing of manuscript drafts. All authors contributed critically to the drafts and gave final approval for publication.

ACKNOWLEDGEMENTS

We thank the University of Leeds and our respective Schools for helping foster cross-disciplinary discussion and the formation of ‘The Water Value Research Group’, comprised of the current authors. The conceptual development and writing of this paper were made possible by the generous support of several funding sources at The University of Leeds. These were The Interdisciplinary Research and Impact Fund for Culture at Leeds Arts & Humanities Research Institute; water@leeds; and the School of Politics and International Studies’ Strategic Research Investment Fund.

FUNDING INFORMATION

This work was supported by the Integrated Catchment Solutions Programme (iCASP) funded by the UK Natural Environment Research Council’s Regional Impact from Science of the Environment scheme (grant NE/P011160/1).

CONFLICT OF INTEREST STATEMENT

The authors are not aware of any conflict of interest associated with this article.

DATA AVAILABILITY STATEMENT

No new data were generated in the production of this article.

ORCID

Joshua B. Cohen  <https://orcid.org/0000-0001-8743-2233>

Charles Dannreuther  <https://orcid.org/0000-0003-3028-6102>

Markus Fraundorfer  <https://orcid.org/0000-0002-5446-9635>

Julia Martin-Ortega  <https://orcid.org/0000-0003-0002-6772>

Anna Mdee  <https://orcid.org/0000-0002-8260-1840>

ENDNOTES

¹As far as we are aware this is a neologism, although see Wood (2020), discussed below.

²We have elsewhere (see Abrams et al., 2023) previously outlined similar historical processes of water transforming from kin to thing.

³We are in agreement with much of the literature on the nonhuman where it argues that what we might typically delineate as ‘human’ is always *more* in the sense that ‘I’ at any moment includes bacteria, air, food, DNA which is ‘not me’, as well as ongoing mutually constituting relations with animals, plants, waters (e.g. Panelli, 2010; Searle & Turnbull, 2020; Tsing, 2013). Such a sense of deep, inextricable hybridity should be taken as read in this article. At the same time, we do think that there is something particular about humanity and that it is sometimes necessary to be able to point to this particularity.

⁴An article we found when searching for the term ‘Riverkin’.

REFERENCES

- Abrams, A., Cohen, J., Dannreuther, C., & Fraundorfer, M. (2023). From kin to thing: The environmental and human death zones of European waters. In N. S. Sutil & C. Söderbergh (Eds.), *Minority and indigenous trends 2023. Focus on water* (pp. 48–63). Minority Rights Group International.
- Acreman, M., Smith, A., Charters, L., Tickner, D., Opperman, J., Acreman, S., Edwards, F., Sayers, P., & Chivava, F. (2021). Evidence for the effectiveness of nature-based solutions to water issues in Africa. *Environmental Research Letters*, 16(6), 063007. <https://doi.org/10.1088/1748-9326/ac0210>
- Adger, W. N., Quinn, T., Lorenzoni, I., & Murphy, C. (2016). Sharing the pain: Perceptions of fairness affect private and public response to hazards. *Annals of the American Association of Geographers*, 106(5), 1079–1096. <https://doi.org/10.1080/24694452.2016.1182005>
- Admiraal, J. F., Van den Born, R. J. G., Beringer, A., Bonaiuto, F., Cicero, L., Hiedanpää, J., Knights, P., Knippenberg, L. W. J., Molinaro, E., Musters, C. J. M., Naukkarinen, O., Polajnar, K., Popa, F., Smrekar, A., Soininen, T., Porrás-Gómez, C., Soethe, N., Vivero-Pol, J.-L., & De Groot, W. T. (2017). Motivations for committed nature conservation action in Europe. *Environmental Conservation*, 44(2), 148–157. <https://doi.org/10.1017/s037689291700008x>
- Alam, B. (2020). *Improving the regulatory framework of floodplain development and management in the United Kingdom*. University of Salford.
- Albert, C., Schröter, B., Haase, D., Brillinger, M., Henze, J., Herrmann, S., Gottwald, S., Guerrero, P., Nicolas, C., & Matzdorf, B. (2019). Addressing societal challenges through nature-based solutions: How can landscape planning and governance research contribute? *Landscape and Urban Planning*, 182, 12–21. <https://doi.org/10.1016/j.landurbplan.2018.10.003>
- Aldag, A. F. (2020). *Common Magick: Origins and practices of British folk Magick*. Llewellyn Worldwide.
- Allen, R. C. (2009). *The British industrial revolution in global perspective*. Cambridge University Press.

- Almond, R., Grooten, M., & Peterson, T. (2020). *Living planet report 2020—Bending the curve of biodiversity loss*. World Wildlife Fund.
- Anderson, C. C., Renaud, F. G., Hanscomb, S., Munro, K. E., González-Ollauri, A., Thomson, C., Pouta, E., Soini, K., Loupis, M., Panga, D., & Stefanopoulou, M. (2021). Public acceptance of nature-based solutions for natural Hazard risk reduction: Survey findings from three study sites in Europe. *Frontiers in Environmental Science*, 9. <https://doi.org/10.3389/fenvs.2021.678938>
- Arias-Arévalo, P., Martín-López, B., & Gómez-Baggethun, E. (2017). Exploring intrinsic, instrumental, and relational values for sustainable management of social-ecological systems. *Ecology and Society*, 22(4). <https://doi.org/10.5751/ES-09812-220443>
- Ashlubby, K. J., Pahl, S., Webley, P., & White, M. P. (2013). The beach as a setting for families' health promotion: A qualitative study with parents and children living in coastal regions in Southwest England. *Health & Place*, 23, 138–147.
- Austin, M. (2021). COP26: Sewage and informal settlements are choking Brazil's Amazonian waterways. *Sky News*, 2 November 2021.
- Ball, K., Haggerty, K., & Lyon, D. (2012). *Routledge handbook of surveillance studies*. Taylor and Francis.
- Barciela-Rial, M., den Heijer, F., & Rijke, J. (2020). *A way forward for building with nature in river areas*. CRC Press/Balkema, 1797–1804.
- Bark, R. H., Martin-Ortega, J., & Waylen, K. A. (2021). Stakeholders' views on natural flood management: Implications for the nature-based solutions paradigm shift? *Environmental Science and Policy*, 115, 91–98.
- Barkham, P. (2021). Pollution is damaging UK rivers more than public thinks, report says. *The Guardian*, 15 September.
- Bayliss, K., Mattioli, G., & Steinberger, J. (2020). Inequality, poverty and the privatization of essential services: A 'systems of provision' study of water, energy and local buses in the UK. *Competition and Change*, 25(3–4), 478–500.
- Beckensall, S. (2002). British prehistoric rock-art in the landscape. In G. Nash & C. Chippindale (Eds.), *European landscapes of rock-art* (pp. 39–70). Routledge.
- Begg, A. (2021). Declare South Africa's wastewater treatment a national disaster, urges SAHRC. *The Daily Maverick*, 18 November.
- Bell, S., Fleming, L. E., Grellier, J., Kuhlmann, F., Nieuwenhuijsen, M. J., & White, M. P. (2021). *Urban blue spaces: Planning and design for water, health and well-being*. Routledge.
- Berry, H. (2017). The great Tyne flood of 1771: Community responses to an environmental crisis in the early Anthropocene. In J. M. Kelly (Ed.), *Rivers of the Anthropocene* (pp. 119–134). University of California Press.
- Bird-David, N. (1999). 'Animism' revisited: Personhood, environment, and relational epistemology. *Current Anthropology*, 40(S1), S67–S91.
- Bird-David, N. (2020). A peer-to-peer connected cosmos: Beyond egalitarian/hierarchical hunter-gatherer societies. *L'Homme*, 236(3), 77–106.
- Boonzaier, E., & Sharp, J. (1988). *South African keywords: The uses and abuses of political concepts*. David Philip.
- Booth, R., Elgot, J., & Dugan, E. (2022). Unions issue threat of UK general strike as rail crisis grows. *The Guardian*, 27 July. <https://www.theguardian.com/uk-news/2022/jul/27/train-drivers-vote-for-fresh-strikes-as-disruptions-hit-britains-rail-network>
- Booth, R., García, C. A., & Duncan, P. (2022). Shamanism, Pagans and Wiccans: Trends from the England and Wales Census. *The Guardian*, 29 November. <https://www.theguardian.com/uk-news/2022/nov/29/ten-things-weve-learned-from-the-england-and-wales-census>
- Bord, J., & Bord, C. (1986). *Sacred waters: Holy wells and water lore in Britain and Ireland*. HarperCollins.
- Borges, C., & Maso, T. F. (2017). The collapse of the River Doce dam. *Sur—International Journal on Human Rights*, 25, 71.
- Borrows, J. (2016). Heroes, tricksters, monsters, and caretakers: Indigenous law and legal education. *McGill Law Journal/Revue de droit de McGill*, 61(4), 795–846.
- Bowes, M. J., Read, D. S., Joshi, H., Sinha, R., Ansari, A., Hazra, M., Simon, M., Vishwakarma, R., Armstrong, L. K., Nicholls, D. J. E., Wickham, H. D., Ward, J., Carvalho, L. R., & Rees, H. G. (2020). Nutrient and microbial water quality of the upper Ganga River, India: identification of pollution sources. *Environmental Monitoring and Assessment*, 192(8). <https://doi.org/10.1007/s10661-020-08456-2>
- Bowler, P. J. (2000). *The earth encompassed: A history of the environmental sciences*. WW Norton & Company.
- Boyd, D. R. (2017). *The rights of nature: A legal revolution that could save the world*. ECW Press.
- Bridgewater, P. (2018). Whose nature? What solutions? Linking ecohydrology to nature-based solutions. *Ecohydrology and Hydrobiology*, 18(4), 311–316.
- Brierley, G. J. (2019). *Finding the voice of the river: Beyond restoration and management*. Springer Nature.
- Brightman, M., & Lewis, J. (2017). *The anthropology of sustainability: Beyond development and progress*. Springer.
- Bullough, O. (2022). Sewage sleuths: The men who revealed the slow, dirty death of Welsh and English rivers. *The Guardian*, 4 August 2022. <https://www.theguardian.com/environment/2022/aug/04/sewage-sleuths-river-pollution-slow-dirty-death-of-welsh-and-english-rivers>
- Capra, F., & Luisi, P. L. (2014). *The systems view of life: A unifying vision*. Cambridge University Press.
- Césaire, A. (1972). *Discourse on colonialism*. Monthly Review Press.
- Cianchi, J. (2015). *Radical environmentalism: Nature, identity and nonhuman agency*. Springer.
- Clapp, B. W. (1994). *An environmental history of Britain since the industrial revolution*. Longman.
- Clinch, M. (2021). Environmental stewardship in austere times: Nurturing sustainable socio-ecological relations. *Critical Public Health*, 31(3), 245–254. <https://doi.org/10.1080/09581596.2020.1853057>
- Cohen, J. B. (2020). Water, justice, and wellbeing in the Kamiesberg, Namaqualand: Reflecting on local histories in the context of the Anthropocene. *Wiley Interdisciplinary Reviews Water*, 7(6), e1484.
- Collis, S. (2016). *Once in Blockadia*. Talon Books.
- Comberty, C., Thornton, T. F., Wyllie de Echeverria, V., & Patterson, T. (2015). Ecosystem services or services to ecosystems? Valuing cultivation and reciprocal relationships between humans and ecosystems. *Global Environmental Change*, 34, 247–262. <https://doi.org/10.1016/j.gloenvcha.2015.07.007>
- Conway, D. J. (2019). *Magical mermaids and water creatures*. Weiser Books.
- Coombes, B. (2020). Nature's rights as indigenous rights? Mis/recognition through personhood for Te Urewera. *Espace populations sociétés. Space populations societies*, (2020/1-2).
- Coombes, B. (2021). Personifying indigenous rights in nature? Treaty settlement and co-management in Te Urewera. In R.-H. Andersson, B. Cothran, & S. Kekki (Eds.), *Bridging cultural concepts of nature: Indigenous people and protected spaces of nature* (pp. 29–60). Helsinki University Press.
- Crow, J. (2022). Indigeneity, land and property. In *Itinerant ideas: Race, indigeneity and cross-border intellectual encounters in Latin America (1900–1950)* (pp. 69–100). Springer International Publishing.
- Cusack, C. M. (2012). Charmed circle: Stonehenge, contemporary paganism, and alternative archaeology. *Numen*, 59(2–3), 138–155.
- Deinet, S., Scott-Gatty, K., Rotton, H., Twardek, W. M., Marconi, V., McRae, L., Baumgartner, L. J., Brink, K., Claussen, J., & Cooke, S. J. (2020). *The living planet index (LPI) for migratory freshwater fish: Technical report*. World Fish Migration Foundation.
- Delbourgo, J. (2008). *Science and empire in the Atlantic world*. Routledge.
- Denton, H., & Aranda, K. (2020). The wellbeing benefits of sea swimming. Is it time to revisit the sea cure? *Qualitative Research in Sport, Exercise and Health*, 12(5), 647–663. <https://doi.org/10.1080/2159676X.2019.1649714>

- Di Grazia, F., Gumiero, B., Galgani, L., Troiani, E., Ferri, M., & Loïselle, S. A. (2021). Ecosystem services evaluation of nature-based solutions with the help of citizen scientists. *Sustainability*, 13(19), 10629. <https://doi.org/10.3390/su131910629>
- Díaz, S., Demissew, S., Carabias, J., Joly, C., Lonsdale, M., Ash, N., Larigauderie, A., Adhikari, J. R., Arico, S., Báldi, A., Bartuska, A., Baste, I. A., Bilgin, A., Brondizio, E., Chan, K. M. A., Figueroa, V. E., Duraiappah, A., Fischer, M., Hill, R., ... Zlatanova, D. (2015). The IPBES conceptual framework—Connecting nature and people. *Current Opinion in Environmental Sustainability*, 14, 1–16.
- Díaz, S., Demissew, S., Joly, C., Lonsdale, W. M., & Larigauderie, A. (2015). A Rosetta Stone for nature's benefits to people. *PLoS Biology*, 13(1), e1002040.
- Ditchfield, P. H. (1896). *Old English customs, extant at the present time: An account of local observances, festival customs, and ancient ceremonies yet surviving in Great Britain*. Methuen.
- Djohari, N., Brown, A., & Stolk, P. (2018). The comfort of the river: Understanding the affective geographies of angling waterscapes in young people's coping practices. *Children's Geographies*, 16(4), 356–367.
- do Carmo, F. F., Kamino, L. H. Y., Junior, R. T., de Campos, I. C., do Carmo, F. F., Silvino, G., Silva Xavier de Castro, K. J., Mauro, M. L., Rodrigues, N. U. A., de Miranda, M. P., & Pinto, C. E. F. (2017). Fundão tailings dam failures: the environment tragedy of the largest technological disaster of Brazilian mining in global context. *Perspectives in Ecology and Conservation*, 15(3), 145–151. <https://doi.org/10.1016/j.pecon.2017.06.002>
- Donald, D. (2009). Forts, curriculum, and indigenous Métissage: Imagining decolonization of Aboriginal–Canadian relations in educational contexts. *First Nations Perspectives*, 2(1), 1–24.
- Eason, C. (2013). *The Magick of faeries: Working with the spirits of nature*. Llewellyn Worldwide.
- Eckstein, G., D'Andrea, A., Marshall, V., O'Donnell, E., Talbot-Jones, J., Curran, D., & O'Bryan, K. (2019). Conferring legal personality on the world's rivers: A brief intellectual assessment. *Water International*, 44(6–7), 804–829. <https://doi.org/10.1080/02508060.2019.1631558>
- Ellis, M. (2022). 'Quite an eye-opener': Workers absorb iwi values guiding \$50m port upgrade. *Manawatū standard*, 12 April.
- England S. (2017). *The health and wellbeing benefits of swimming: Individually, economically, nationally*. Commissioned by Swim England's Swimming and Health Commission, chaired by Professor Ian Cumming.
- Escobar, A. (1995). *Encountering development: The making and unmaking of the third world*. Princeton studies in culture/power/history. Princeton University Press.
- Espinoza, M. I., & Aronczyk, M. (2021). Big data for climate action or climate action for big data? *Big Data & Society*, 8(1), 2053951720982032.
- Fanon, F. (2007). *The wretched of the earth*. Grove/Atlantic, Inc.
- Fassbender, B., & Traisbach, K. (2019). *The limits of human rights*. Oxford University Press.
- Fernandes, G. W., Goulart, F. F., Ranieri, B. D., Coelho, M. S., Dales, K., Boesche, N., Bustamante, M., Carvalho, F. A., Carvalho, D. C., Dirzo, R., Fernandes, S., Galetti, P. M., Jr., Millan, V. E. G., Mielke, C., Ramirez, J. L., Neves, A., Rogass, C., Ribeiro, S. P., Scariot, A., ... Soares-Filho, B. (2016). Deep into the mud: Ecological and socio-economic impacts of the dam breach in Mariana, Brazil. *Natureza & Conservação*, 14(2), 35–45.
- Fitzhugh, B., Butler, V. L., Bovy, K. M., & Etnier, M. A. (2019). Human ecodynamics: A perspective for the study of long-term change in socioecological systems. *Journal of Archaeological Science: Reports*, 23, 1077–1094.
- Foley, R. (2011). Performing health in place: The holy well as a therapeutic assemblage. *Health & Place*, 17(2), 470–479.
- Foley, R. (2013). Small health pilgrimages: Place and practice at the holy well. *Culture and Religion*, 14(1), 44–62.
- Foley, R. (2015). Swimming in Ireland *Health & Place*, 35, 218–225.
- Foley, R. (2017). Swimming as an accretive practice in healthy blue space. *Emotion, Space and Society*, 22, 43–51.
- Foley, R., Kearns, R., Kistemann, T., & Wheeler, B. (2019). *Blue space, health and wellbeing: Hydrophilia unbounded*. Routledge.
- Forest, D. (2020). *Wild magic: Celtic folk traditions for the solitary practitioner*. Llewellyn Worldwide.
- Foster, J. B., Clark, B., & Holleman, H. (2021). Marx and the commons. *Social Research: An International Quarterly*, 88(1), 1–30.
- Foucault, M. (1970). *The order of things*. Pantheon.
- Foucault, M. (2007). *Security, territory, population: Lectures at the college de France 1977–1978*. Palgrave.
- Fowler, C. (2021). Ontology in Neolithic Britain and Ireland: Beyond animism. *Religion*, 12(4), 249. <https://doi.org/10.3390/rel12040249>
- Francis, D., & Webster, E. (2019). Poverty and inequality in South Africa: Critical reflections. *Development Southern Africa*, 36(6), 788–802.
- franciscancompanionsofthecross.co.uk. (n.d.). *The Franciscan companions of the cross*. <https://franciscancompanionsofthecross.co.uk/>
- Friends of the River Dean. (2022). *Friends of the River Dean*. <https://www.facebook.com/FriendsOfTheBollyDean/>
- Friends of the River Frome. (2022). *About us*. <https://friendsoftheriverfrome.co.uk/about-us/>
- Garrett, J. K., Clitherow, T. J., White, M. P., Wheeler, B. W., & Fleming, L. E. (2019). Coastal proximity and mental health among urban adults in England: The moderating effect of household income. *Health & Place*, 59, 102200.
- Gentry, K. (2015). *History, heritage, and colonialism: Historical consciousness, britishness, and cultural identity in New Zealand, 1870–1940*. Manchester University Press.
- Ghosh, A. (2016). *The great derangement: Climate change and the unthinkable*. University of Chicago Press.
- Gilmartin, D. (1994). Scientific empire and imperial science: Colonialism and irrigation technology in the Indus Basin. *The Journal of Asian Studies*, 53(4), 1127–1149.
- Giordano, R., Manez-Costa, M., Pagano, A., Rodriguez, B. M., Zorrilla-Miras, P., Gomez, E., & Lopez-Gunn, E. (2021). Combining social network analysis and agent-based model for enabling nature-based solution implementation: The case of Medina del Campo (Spain). *Science of the Total Environment*, 801, 149734. <https://doi.org/10.1016/j.scitotenv.2021.149734>
- Giordano, R., Pluchinotta, I., Pagano, A., Scricciu, A., & Nanu, F. (2020). Enhancing nature-based solutions acceptance through stakeholders' engagement in co-benefits identification and trade-offs analysis. *Science of the Total Environment*, 713, 136552. <https://doi.org/10.1016/j.scitotenv.2020.136552>
- Gkiatas, G., Kasapidis, I., Koutalakis, P., Iakovoglou, V., Savvopoulou, A., Germantzidis, I., & Zaimas, G. N. (2021). Enhancing urban and sub-urban riparian areas through ecosystem services and ecotourism activities. *Water Supply*, 21(6), 2974–2988.
- Gomersall, H. M. (2000). Departed glory: The archaeology of the Leeds tanning industry 1780 to 1914. *Industrial Archaeology Review*, 22(2), 133–144.
- Gómez Martín, E., Giordano, R., Pagano, A., van der Keur, P., & Costa, M. M. (2020). Using a system thinking approach to assess the contribution of nature based solutions to sustainable development goals. *Science of the Total Environment*, 738, 139693. <https://doi.org/10.1016/j.scitotenv.2020.139693>
- Gómez-Baggethun, E., de Groot, R., Lomas, P. L., & Montes, C. (2010). The history of ecosystem services in economic theory and practice: From early notions to markets and payment schemes. *Ecological Economics*, 69(6), 1209–1218.
- Gordon, R. (1992). *The bushman myth: The making of a Namibian underclass*. Westview Press.
- Gottschalk, P. (2013). *Religion, science, and empire: Classifying Hinduism and Islam in British India*. Oxford University Press.

- Gould, R. K., & Lincoln, N. K. (2017). Expanding the suite of cultural ecosystem services to include ingenuity, perspective, and life teaching. *Ecosystem Services*, 25, 117–127.
- Gould, R. K., Klain, S. C., Ardoin, N. M., Satterfield, T., Woodside, U., Hannahs, N., Daily, G. C., & Chan, K. M. (2014). A protocol for eliciting nonmaterial values through a cultural ecosystem services frame. *Conservation Biology*, 29(2), 575–586. <https://doi.org/10.1111/cobi.12407>
- Gowdy, J. (2020). Our hunter-gatherer future: Climate change, agriculture and uncivilization. *Futures*, 115, 102488.
- Graeber, D., & Wengrow, D. (2021). *The dawn of everything: A new history of humanity*. Penguin UK.
- Green, L. (2020). *Rock|water|life*. Duke University Press.
- Greenwood, S. (2020a). *The anthropology of magic*. Routledge.
- Greenwood, S. (2020b). *Magic, witchcraft and the otherworld: An anthropology*. Routledge.
- Grill, G., Lehner, B., Thieme, M., Geenen, B., Tickner, D., Antonelli, F., Babu, S., Borrelli, P., Cheng, L., Crochetiere, H., Ehalt Macedo, H., Filgueiras, R., Goichot, M., Higgins, J., Hogan, Z., Lip, B., McClain, M. E., Meng, J., Mulligan, M., ... Zarfl, C. (2019). Mapping the world's free-flowing rivers. *Nature*, 569(7755), 215–221.
- Grove, R. H. (1996). *Green imperialism: Colonial expansion, tropical Island Edens and the origins of environmentalism, 1600–1860*. Cambridge University Press.
- Guattari, F. (2000). *The three ecologies*, trans. by Ian Pindar & Paul Sutton. Continuum.
- Hall, M. (2011). *Plants as persons: A philosophical botany*. Suny Press.
- Hamlin, C. (2000). 'Waters' or 'water'?—Master narratives in water history and their implications for contemporary water policy. *Water Policy*, 2(4–5), 313–325.
- Haraway, D. (2015). Anthropocene, capitalocene, plantationocene, chthulucene: Making kin. *Environmental Humanities*, 6(1), 159–165.
- Hartley, D. (1964). *Water in England*. Macdonald.
- Harvey, D. (2017). *Marx, capital, and the madness of economic reason*. Oxford University Press.
- Haughey, F. M. (2009). *People and water: A study of the relationship between humans and rivers in the Mesolithic and Neolithic with particular reference to that within the Thames Basin*. University of London.
- Hayman, E., James, C., & Wedge, M. (2018). Future rivers of the Anthropocene or whose Anthropocene is it? Decolonising the Anthropocene! *Decolonization: Indigeneity, Education & Society*, 7(1), 77–92.
- Higgs, E. (2001). The rise of the information state: The development of central state surveillance of the citizen in England, 1500–2000. *Journal of Historical Sociology*, 14(2), 175–197.
- Hikuroa, D., Brierley, G., Tadaki, M., Blue, B., & Salmond, A. (2021). Restoring sociocultural relationships with rivers: Experiments in fluvial pluralism. In B. Morandi, M. Cottet, & H. Piégay (Eds.), *River restoration: Political, social, and economic perspectives* (pp. 66–88). John Wiley & Sons.
- Himes, A., & Muraca, B. (2018). Relational values: The key to pluralistic valuation of ecosystem services. *Current Opinion in Environmental Sustainability*, 35, 1–7.
- HM Government. (2018). *A green future: Our 25 year plan to improve the environment*. HM Government.
- Hussain, S. T., & Riede, F. (2020). Paleoenvironmental humanities: Challenges and prospects of writing deep environmental histories. *WIREs Climate Change*, 11(5), e667.
- Hutton, R. (2013). *Pagan Britain*. Yale University Press.
- Hutton, R. (2019). *The triumph of the moon: A history of modern pagan witchcraft*. Oxford University Press.
- Iberdrola, S. A. (2021). *Green data: Can statistics help the environment?* <https://www.iberdrola.com/environment/big-data-and-environment>
- Illich, I. (1985). *Water and the waters of forgetfulness*. Dallas Institute of Humanities and Culture.
- Ingold, T. (2000). *The perception of the environment: Essays on livelihood, dwelling and skill*. Routledge.
- IPBES. (2019). *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. IPBES.
- Jakubínský, J., Prokopová, M., Raška, P., Salvati, L., Bezak, N., Cudlín, O., Cudlín, P., Purkyt, J., Vezza, P., Camporeale, C., Daněk, J., Pástor, M., & Lepeška, T. (2021). Managing floodplains using nature-based solutions to support multiple ecosystem functions and services. *Wiley Interdisciplinary Reviews Water*, 8(5), e1545. <https://doi.org/10.1002/wat2.1545>
- Johnston, R. (2020). *Bronze age worlds: A social prehistory of Britain and Ireland*. Routledge.
- Jones, A. M. (2020). An archaeology of affect *Journal of Archaeological Method and Theory*, 27(3), 545–560.
- Jones, J., Börger, L., Tummers, J., Jones, P., Lucas, M., Kerr, J., Kemp, P., Bizzi, S., Consuegra, S., Marcello, L., Vowles, A., Belletti, B., Verspoor, E., van de Bund, W., Gough, P., & Garcia de Leaniz, C. (2019). A comprehensive assessment of stream fragmentation in Great Britain. *Science of the Total Environment*, 673, 756–762. <https://doi.org/10.1016/j.scitotenv.2019.04.125>
- Kahui, V., & Richards, A. C. (2014). Lessons from resource management by indigenous Maori in New Zealand: Governing the ecosystems as a commons. *Ecological Economics*, 102, 1–7.
- Kaiser, N. N., Ghermandi, A., Feld, C. K., Hershkovitz, Y., Palt, M., & Stoll, S. (2021). Societal benefits of river restoration—Implications from social media analysis. *Ecosystem Services*, 50, 101317.
- Kalantzas, S. (2017). River rights and the rights of rivers: The case of Acheloos. *RCC Perspectives*, 6, 45–52. <http://www.jstor.org/stable/26268375>
- Kaminsky, I. (2021). Laws of nature: Could UK rivers be given the same rights as people? *The Guardian*, 17 July.
- Kaminsky, I. (2023). The River Ouse may become first in England to gain legal rights. *The Guardian*, 1 March. <https://www.theguardian.com/environment/2023/mar/01/sussex-river-ouse-first-in-england-legal-rights-aoe>
- Kellert, S. R., & Wilson, E. O. (1993). *The biophilia hypothesis*. Island Press.
- Kelly, J. M., Scarpino, V., Berry, H., Syvitski, J. P., & Meybeck, M. (Eds.). (2018). *Rivers of the Anthropocene*. University of California Press.
- Kessler, N. H. (2019). *Ontology and closeness in human-nature relationships*. Springer.
- Kiedrzyńska, E., Belka, K., Jarosiewicz, P., Kiedrzyński, M., & Zalewski, M. (2021). The enhancement of valley water retentiveness in climate change conditions. *Science of the Total Environment*, 799, 149427. <https://doi.org/10.1016/j.scitotenv.2021.149427>
- Kirmayer, L. J., Dandeneau, S., Marshall, E., Phillips, M. K., & Williamson, K. J. (2011). Rethinking resilience from indigenous perspectives. *The Canadian Journal of Psychiatry*, 56(2), 84–91.
- Knight, P. (1998). *Sacred Dorset: On the path of the dragon*. Capall Bann.
- Kohn, E. (2007). How dogs dream: Amazonian natures and the politics of transspecies engagement. *American Ethnologist*, 34(1), 3–24.
- Kohn, E. (2013). *How forests think: Toward an anthropology beyond the human*. University of California Press.
- Kopenawa, D., & Albert, B. (2013). *The falling sky*. Harvard University Press.
- Krzywoszynska, A. (2019). Caring for soil life in the Anthropocene: The role of attentiveness in more-than-human ethics. *Transactions of the Institute of British Geographers*, 44(4), 661–675. <https://doi.org/10.1111/tran.12293>
- Kuhn, T. S. (1996). *The structure of scientific revolutions* (3rd ed.). University of Chicago Press.
- Lackey, N. Q., Tysor, D. A., McNay, G. D., Joyner, L., Baker, K. H., & Hodge, C. (2019). Mental health benefits of nature-based recreation: A systematic review. *Annals of Leisure Research*, 24(3), 379–393. <https://doi.org/10.1080/11745398.2019.1655459>

- Lade, S. J., Steffen, W., de Vries, W., Carpenter, S. R., Donges, J. F., Gerten, D., Hoff, H., Newbold, T., Richardson, K., & Rockström, J. (2019). Human impacts on planetary boundaries amplified by Earth system interactions. *Nature Sustainability*, 3(2), 119–128. <https://doi.org/10.1038/s41893-019-0454-4>
- Lampkin, J. A., & Wyatt, T. (2020). Utilising principles of earth jurisprudence to prevent environmental harm: Applying a case study of unconventional hydraulic fracturing for shale gas in the United Kingdom. *Critical Criminology*, 28(3), 501–516.
- Latour, B. (1993a). *We have never been modern*. Trans. C. Porter. Harvard University Press. 1st French ed., published by La Découverte, Paris.
- Latour, B. (1993b). *The pasteurization of France*. Harvard University Press.
- Latour, B., & Porter, C. (2010). *On the modern cult of the factish gods*. Duke University Press.
- Laville, S. (2020). Shocking state of English rivers revealed as all of them fail pollution tests. *The Guardian*, 17.09.2020.
- Laville, S. (2021a). Cutbacks stopping vital work on river pollution and floods in England. *The Guardian*, 22.06.2021.
- Laville, S. (2021b). Environment agency launches major investigation into sewage. *The Guardian*, 18.11.2021.
- Laville, S. (2021c). Water in UK's first official bathing river to be designated poor-quality. *The Guardian*, 06.04.2021.
- Laville, S. (2023). UK urged to protect environmental standards when EU laws scrapped. *The Guardian*, 19.06.2023.
- Laville, S., & Horton, H. (2023). Water firms discharged raw sewage 300,000 times last year, court hears. *The Guardian*, 4 July. <https://www.theguardian.com/environment/2023/jul/04/thames-water-fined-33m-for-pumping-sewage-into-rivers>
- Lawyers for Nature. (2021). *Representing the natural world and all those who seek to defend it*. <https://www.lawyersfornature.com/>
- Lin, Y., Wang, Z., Jim, C. Y., Li, J., Deng, J., & Liu, J. (2020). Water as an urban heat sink: Blue infrastructure alleviates urban heat Island effect in mega-city agglomeration. *Journal of Cleaner Production*, 262, 121411.
- Linton, J. (2010). *What is water?: The history of a modern abstraction*. UBC Press.
- Little Bear, L. (2012). Traditional knowledge and humanities: A perspective by a blackfoot. *Journal of Chinese Philosophy*, 39(4), 518–527.
- Liu, H. (2020). *Smart cities: Big data prediction methods and applications*. Springer Nature.
- Loftus, A., March, H., & Purcell, T. F. (2019). The political economy of water infrastructure: An introduction to financialization. *WIREs Water*, 6(1), e1326.
- Louv, R. (2008). *Last child in the woods: Saving our children from nature-deficit disorder*. Algonquin Books.
- Luxemburg, R., & Bukharin, N. (1972). *Imperialism and the accumulation of capital*. Allen Lane. Penguin Press.
- MacDowall, R. M. (1994). *Gamekeepers for the nation: The story of New Zealand's acclimatisation societies, 1861-1990*. Canterbury University Press.
- MacEowen, F. H. (2002). *The mist-filled path: Celtic wisdom for exiles, wanderers, and seekers*. New World Library.
- Manikuanishtiku, J. G., Desbiens, C., & Kanapé, E. (2021). A river of names: The multiple voices of Innu Riverscape. *River Research and Applications*, 38, 412–421. <https://doi.org/10.1002/rra.3876>
- Martin-Ortega, J., Mesa-Jurado, M. A., Pineda-Vazquez, M., & Novo, P. (2019). Nature commodification: 'A necessary evil'? An analysis of the views of environmental professionals on ecosystem services-based approaches. *Ecosystem Services*, 37, 100926.
- Martuwarra RiverOfLife, Unamen Shipu Romaine River, Poelina, A., Wooltorton, S., Guimond, L., & Durand, G. S. (2021). Hearing, voicing and healing: Rivers as culturally located and connected. *River Research and Applications*, 38, 422–434.
- Marx, K. (2007). *Capital: A critique of political economy*. Duke University Press.
- Mathews, G., & Izquierdo, C. (2008). *Pursuits of happiness: Well-being in anthropological perspective*. Berghahn Books.
- Mathias, P. (2013). *The first industrial nation: The economic history of Britain 1700-1914*. Routledge.
- Mattison, S. M., Smith, E. A., Shenk, M. K., & Cochrane, E. E. (2016). The evolution of inequality. *Evolutionary Anthropology: Issues, News, and Reviews*, 25(4), 184–199.
- McDonough, C. (2019). Folk belief and landscape in Connacht: Accounts from the ordnance survey letters. *Folk Life*, 57(1), 56–69.
- McGregor, J. A. (2018). Reconciling universal frameworks and local realities in understanding and measuring wellbeing. In I. Bache & K. Scott (Eds.), *The politics of wellbeing: Theory, policy and practice* (pp. 197–224). Springer International Publishing.
- McIntosh, A. (2004). *Soil and soul: People versus corporate power*. Aurum Press Limited.
- McLaren-Kennedy, P. (2022). European first as Mar Menor ecosystem recognised as legal entity with rights. *Euro Weekly News*, 13 July. <https://euroweeklynews.com/2022/07/13/european-first-as-mar-menor-ecosystem-recognised-as-legal-entity-with-rights/>
- McTominey, A. (2017). Bad neighbours? Water supply and the civic rivalry of Leeds and Bradford, c.1850-1887. *International Journal of Regional and Local History*, 12(1), 24–41.
- McTominey, A. (2020). A tale of two Yorkshire villages: The local environmental impact of British reservoir development, c. 1866-1966. *Environmental History*, 26(3), 331–358.
- Meissner, R. (2021). *State capture's impact on South African water sector reform*. Water Alternatives. <https://www.water-alternatives.org/index.php/blog/sa>
- Middleton, J. M., Banfied-Nwachi, A. L., Blight, G., & Hughes, C. (2023). UK strike calendar—Service stoppages planned for March and April. *The Guardian*, 6 March 2023. <https://www.theguardian.com/uk-news/2023/feb/02/uk-strike-days-calendar-public-service-when-planned-february-march>
- Midgley, S. J. E., Esler, K. J., Holden, P. B., Rebelo, A. J., Stuart-Hill, S. I., Cullis, J. D. S., & Methner, N. (2021). Typologies of collaborative governance for scaling nature-based solutions in two strategic South African river systems. *Ambio*, 50(8), 1587–1609. <https://doi.org/10.1007/s13280-021-01531-z>
- Milojevic-Dupont, N., & Creutzig, F. (2021). Machine learning for geographically differentiated climate change mitigation in urban areas. *Sustainable Cities and Society*, 64, 102526.
- Monbiot, G. (2022). Factory farming is turning this beautiful British river into an open sewer. *The Guardian*, 10 June.
- Moore, J. W. (2015). *Capitalism in the web of life: Ecology and the accumulation of capital*. Verso Books.
- Moore, J. W. (2017). The Capitalocene, Part I: On the nature and origins of our ecological crisis. *The Journal of Peasant Studies*, 44(3), 594–630.
- Mordue, T., & Wilson, S. (2022). *More-than-human encounters with fish in the city: From careful angling practice to deadly indifference*. Leisure Studies. <https://doi.org/10.1080/02614367.2022.2134440>
- Morton, T. (2016). *Dark ecology: For a logic of future coexistence*. Columbia University Press.
- Ngā Tāngata Tiaki. (2021). *Tupua te Kawa*. <https://www.ngatangataiaki.co.nz/our-story/tupua-te-kawa/>
- Nixon, S. (2021). Quebec river has legal personhood: What that means for granting nature rights. *Natural Resources*, March 25. <https://www.law360.ca/articles/25603/quebec-river-has-legal-personhood-what-that-means-for-granting-nature-rights-sean-nixon>
- O'Donnell, E. L. (2017). At the intersection of the sacred and the legal: Rights for nature in Uttarakhand, India. *Journal of Environmental Law*, 30(1), 135–144.
- Ofori, A. D., & Mdee, A. (2020). Integrated water resource management. In *Clean water and sanitation* (pp. 1–13). https://doi.org/10.1007/978-3-319-70061-8_4-1
- Olaberria, E., & Reinhart, C. (2022). *The reversal problem: Development going backwards*. World Bank Blogs. <https://blogs.worldbank.org/>

- [developmenttalk/reversal-problem-development-going-backwards](#)
- Olwig, K. R. (2016). Virtual enclosure, ecosystem services, landscape's character and the 'rewilding' of the commons: The 'Lake District' case. *Landscape Research*, 41(2), 253–264.
- O'Neill, D. W., Fanning, A. L., Lamb, W. F., & Steinberger, J. K. (2018). A good life for all within planetary boundaries. *Nature Sustainability*, 1(2), 88–95.
- Oxfam International. (2022). 'Terrifying prospect' of over a quarter of a billion more people crashing into extreme levels of poverty and suffering this year. <https://www.oxfam.org/en/press-releases/terrifying-prospect-over-quarter-billion-more-people-crashing-extreme-levels-poverty>
- Panelli, R. (2010). Nonhuman social geographies: Posthuman and other possibilities. *Progress in Human Geography*, 34(1), 79–87.
- Penn, N. (2005). *The forgotten frontier: Colonist and Khoisan on the Cape's northern frontier in the 18th century*. Juta and Company Ltd.
- Pentinat, S. B. (2020). The rights of nature in Europe: Towards new transformative approaches of the environmental protection. *Revista de Derecho Comunitario Europeo*, 2020(65), 79–120.
- Phillips, K., & Lyons, A. (2019). To the waters and the wild: Reflections on eco-social healing in the WILD project. In *Blue space, health and wellbeing* (pp. 65–76). Routledge.
- Pinker, S. (2018). *Enlightenment now: The case for reason, science, humanism, and progress*. Penguin UK.
- Pitt, H. (2018). Muddying the waters. *Geoforum*, 92, 161–170.
- Prillaman, M. (2022). Are we in the Anthropocene? Geologists could define new epoch for earth. *Nature*, 13. <https://www.nature.com/articles/d41586-022-04428-3>
- Putzer, A., Lambooy, T., Jeurissen, R., & Eunsu, K. (2022). Putting the rights of nature on the map. A quantitative analysis of rights of nature initiatives across the world. *Journal of Maps*. <https://doi.org/10.1080/17445647.2022.2079432>
- Reid, J., Taylor-Moore, K., & Varona, G. (2014). Towards a social-structural model for understanding current disparities in Maori health and well-being. *Journal of Loss and Trauma*, 19(6), 514–536.
- Reidy, M. S., & Rozwadowski, H. M. (2014). The spaces in between: Science, ocean, empire. *Isis*, 105(2), 338–351.
- Rizzo, A., Tondera, K., Pálffy, T. G., Dittmer, U., Meyer, D., Schreiber, C., Zacharias, N., Ruppelt, J. P., Esser, D., Molle, P., Troesch, S., & Masi, F. (2020). Constructed wetlands for combined sewer overflow treatment: A state-of-the-art review. *Science of the Total Environment*, 727, 138618. <https://doi.org/10.1016/j.scitotenv.2020.138618>
- Rockström, J., Steffen, W., Noone, K., Persson, A., Chapin, F. S., 3rd, Lambin, E. F., Lenton, T. M., Scheffer, M., Folke, C., Schellnhuber, H. J., Nykvist, B., de Wit, C. A., Hughes, T., van der Leeuw, S., Rodhe, H., Sörlin, S., Snyder, P. K., Costanza, R., Svedin, U., ... Foley, J. A. (2009). A safe operating space for humanity. *Nature*, 461(7263), 472–475. <https://doi.org/10.1038/461472a>
- Rosenthal, L. (2014). *The river pollution dilemma in Victorian England: Nuisance law versus economic efficiency*. Ashgate Publishing, Ltd.
- Rosling, H. (2019). *Factfulness*. Flammarion.
- Rountree, K. (2012). Neo-paganism, animism, and kinship with nature. *Journal of Contemporary Religion*, 27(2), 305–320.
- Russo, K. A., & Smith, Z. A. (2013). Non-conventional community values of water. In *What water is worth: Overlooked non-economic value in water resources*. Palgrave. https://doi.org/10.1057/9781137062499_4
- Salmón, E. (2000). Kincentric ecology: Indigenous perceptions of the human-nature relationship. *Ecological Applications*, 10(5), 1327–1332.
- Salmón, E. (2015). Teaching kincentric ecology in an urban environment. *The Journal of Sustainability Education*, 10, 1–10.
- Salmond, A., Brierley, G., & Hikuroa, D. (2019). Let the rivers speak: Thinking about waterways in Aotearoa New Zealand. *Policy Quarterly*, 15(3). <https://doi.org/10.26686/pq.v15i3.5687>
- Salmond, A., Brierley, G., Hikuroa, D., & Lythberg, B. (2022). Tai Timu, Tai Pari, the ebb and flow of the tides: Working with the Waimatā from the Mountains to the Sea. *New Zealand Journal of Marine and Freshwater Research*, 56(3), 430–446.
- Schimmöller, L. (2020). Paving the way for rights of nature in Germany: Lessons learnt from legal reform in New Zealand and Ecuador. *Transnational Environmental Law*, 9(3), 569–592.
- Schoukens, H. (2020). Rights of nature in the European Union: Contemplating the operationalization of an eco-centric concept in an anthropocentric environment? In J. C. Pereira & A. Saramago (Eds.), *Non-human nature in world politics: Theory and practice* (pp. 205–234). Springer International Publishing.
- Scott, J. C. (1998). *Seeing like a state: How certain schemes to improve the human condition have failed*. Yale University Press.
- Screpanti, E., & Zamagni, S. (2005). *An outline of the history of economic thought*. OUP Oxford.
- Searle, A., & Turnbull, J. (2020). Resurgent natures? Nonhuman perspectives on COVID-19. *Dialogues in Human Geography*, 10(2), 291–295.
- Seddon, N., Chausson, A., Berry, P., Girardin, C. A. J., Smith, A., & Turner, B. (2020). Understanding the value and limits of nature-based solutions to climate change and other global challenges. *Philosophical Transactions of the Royal Society, B: Biological Sciences*, 375(1794), 20190120.
- Serafino, P. (2020). *Exploring religion in England and Wales: February 2020*. <https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/religion/articles/exploringreligioninenglandandwales/february2020>
- Shahzad, M. W., Burhan, M., Ang, L., & Ng, K. C. (2017). Energy-water-environment nexus underpinning future desalination sustainability. *Desalination*, 413, 52–64.
- Sheldrake, R. (2017). *Science and spiritual practices: Reconnecting through direct experience*. UK Hachette.
- Shepherd, N., & Robins, S. L. (2008). *New south African keywords*. Ohio University Press.
- Shirley, R. (2017). Festive landscapes: The contemporary practice of well-dressing in Tissington. *Landscape Research*, 42(6), 650–662.
- Shrubsole, G. (2019). *Who owns England? How we lost our land and how to take it back*. William Collins.
- Simpson, J., & Roud, S. (2000). *A dictionary of English folklore*. Oxford University Press.
- Stengers, I., & Pignarre, P. (2011). *Capitalist sorcery: Breaking the spell*. Palgrave.
- stg-stj.org.uk. (2020). *The canticle of the sun*. <https://stg-stj.org.uk/2020/10/02/the-canticle-of-the-sun-st-francis/>
- Stockwell, B. (2022). The rights of rivers. *The Ecologist*, 9 August. <https://theecologist.org/2022/aug/09/rights-rivers>
- Stone, C. D. (2010). *Should trees have standing? Law, morality and the environment*. Oxford University Press.
- Strang, V. (2004). *The meaning of water*. Berg.
- Strang, V. (2014a). Fluid consistencies. Material relationality in human engagements with water. *Archaeological Dialogues*, 21(2), 133–150.
- Strang, V. (2014b). Lording it over the goddess: Water, gender, and human-environmental relations. *Journal of Feminist Studies in Religion*, 30(1), 85–109.
- Strang, V. (2015). *Reflecting nature: Water beings in history and imagination*. Berghahn Books.
- Strang, V. (2021). *Envisioning a sustainable future for water* *Journal of Water Supply: Research and Technology-AQUA*, 70(4), 404–419. <https://doi.org/10.2166/aqua.2020.101>
- Straughan, E. R. (2012). Touched by water: The body in scuba diving. *Emotion, Space and Society*, 5(1), 19–26.
- Symmank, L., Natho, S., Scholz, M., Schröder, U., Raupach, K., & Schulz-Zunkel, C. (2020). The impact of bioengineering techniques for riverbank protection on ecosystem services of riparian zones. *Ecological Engineering*, 158, 106040. <https://doi.org/10.1016/j.ecoleng.2020.106040>

- Taylor, B. (2009). *Dark green religion: Nature spirituality and the planetary future*. University of California Press.
- Teit, J. A. (1918). Water-beings in Shetlandic folk-lore, as remembered by Shetlanders in British Columbia. *The Journal of American Folklore*, 31(120), 180–201.
- Terêncio, D. P. S., Varandas, S. G. P., Fonseca, A. R., Cortes, R. M. V., Fernandes, L. F., Pacheco, F. A. L., Monteiro, S. M., Martinho, J., Cabral, J., Santos, J., & Cabecinha, E. (2021). Integrating ecosystem services into sustainable landscape management: A collaborative approach. *Science of the Total Environment*, 794, 148538. <https://doi.org/10.1016/j.scitotenv.2021.148538>
- Thames Water. (2022). *Oxford granted bathing water status at Wolvercote Mill Stream*. <https://www.thameswater.co.uk/about-us/newsroom/latest-news/2022/apr/oxford-granted-bathing-water-status>
- Theodore, L., & Dupont, R. R. (2020). *Water resource management issues: Basic principles and applications*. CRC Press.
- Thompson, E. P. (1991). *The making of the English working class [1963]*. Penguin Books.
- Thompson, N., & Wilkie, S. (2020). 'I'm just lost in the world': The impact of blue exercise on participant well-being. *Qualitative Research in Sport, Exercise and Health*, 13(4), 624–638. <https://doi.org/10.1080/2159676x.2020.1761433>
- Todd, Z. (2016). An indigenous feminist's take on the ontological turn: 'Ontology' is just another word for colonialism. *Journal of Historical Sociology*, 29(1), 4–22.
- Toussaint, S., Sullivan, P., & Yu, S. (2005). Water ways in aboriginal Australia: An interconnected analysis. *Anthropological Forum*, 15(1), 61–74.
- Tsing, A. (2013). Nonhuman sociality: A call for critical description. In *Anthropology and nature* (pp. 27–42). Routledge.
- Tsing, A. L. (2015). *The mushroom at the end of the world. On the possibility of life in capitalist ruins*. Princeton University Press.
- Turkelboom, F., Demeyer, R., Vranken, L., de Becker, P., Raymaekers, F., & de Smet, L. (2021). How does a nature-based solution for flood control compare to a technical solution? Case study evidence from Belgium. *Ambio*, 50(8), 1431–1445.
- UK Rivers Network. (2013). *UK and Ireland: local community river groups*. <https://www.ukrivers.net/network.html>
- un.org. (2021). *Universal declaration of human rights*. <https://www.un.org/en/about-us/universal-declaration-of-human-rights>
- United Nations. (2018). *Sustainable development goal 6*. Synthesis report on water and sanitation.
- Vaughan, A., & Yeomans, E. (2023). Swimming spot in Thérèse Coffey's back yard fails to win bathing water status. *The Times*, 10 March 2023. <https://www.thetimes.co.uk/article/river-in-there-se-coffey-s-back-yard-fails-bid-to-win-bathing-water-status-clean-it-up-9blmg-jrtz#:~:text=There%20are%20just%20two%20stretches,Wolvercote%20Mill%20Stream%20in%20Oxfordshire>.
- Villavicencio Calzadilla, P., & Kotzé, L. J. (2018). Living in harmony with nature? A critical appraisal of the rights of mother earth in Bolivia. *Transnational Environmental Law*, 7(3), 397–424.
- Viveiros De Castro, E. (1998). Cosmological deixis and Amerindian perspectivism. *Journal of the Royal Anthropological Institute*, 4, 469–488.
- Wallis, R. J. (2009). Re-enchanting rock art landscapes *Time and Mind*, 2(1), 47–69.
- Watson, S. (2019a). *City water matters: Cultures, practices and entanglements of urban water*. Springer.
- Watson, S. (2019b). Liquid passions: Bodies, publics and city waters. *Social & Cultural Geography*, 20(7), 960–980.
- Watts, V. (2013). Indigenous place-thought and agency amongst humans and non humans (first woman and sky woman go on a European world tour!). *Decolonization: Indigeneity, Education & Society*, 2(1), 20–34.
- Watts, V. (2020). Growling ontologies indigeneity, becoming-souls and settler colonial inaccessibility. In K. S. Montford & C. Taylor (Eds.), *Colonialism and animality* (pp. 115–129). Routledge.
- Weaver, J. (2000). Indigenoussness and indigeneity. In H. Schwarz & S. Ray (Eds.), *A companion to postcolonial studies* (pp. 221–235). Blackwell.
- Werry, M. (2019). What's left of rights? Arendt and political ontology in the anthropocene. *Performance Philosophy*, 5(1), 8–24.
- Westfall, S. (2021). River in India sacred to Hindus blanketed in toxic white foam. *The Washington Post*, 11 November.
- Wilkinson, M. E., Addy, S., Quinn, P. F., & Stutter, M. (2019). Natural flood management: Small-scale progress and larger-scale challenges. *Scottish Geographical Journal*, 135(1–2), 23–32.
- Woo, H. (2020). *Nature-based solutions and similar concepts on water management* (1st ed.). IOP Publishing Ltd.
- Wood, C. (2020). A river runs through me. *Quest*, 201, 11–17.
- Wooltorton, S. (2021). River relationships: For the love of rivers. *River Research and Applications*, 38, 393–402.
- World Bank Group. (2022). *Four decades of poverty reduction in China: Drivers, insights for the world, and the way ahead*. World Bank Group.
- Zuboff, S. (2019). *The age of surveillance capitalism*. Profile Books.

How to cite this article: Cohen, J. B., Dannreuther, C., Fraundorfer, M., Mackie, C., Martin-Ortega, J., Mdee, A., & Sutil, N. S. (2023). Riverkin: Seizing the moment to remake vital relations in the United Kingdom and beyond. *People and Nature*, 00, 1–16. <https://doi.org/10.1002/pan3.10534>