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Editorial

Introduction: Environmental Humanities Approaches to Climate Change

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1. The Environmental Humanities in a Climate Emergency

The development of the environmental humanities as an interdisciplinary formation is a response to an ecological and planetary crisis. But the scale and accelerating pace of that crisis present a significant challenge for researchers in the field. Good scholarship takes time, and the humanities have traditionally been more concerned with offering critique than with devising solutions. How, then, are humanities researchers to face up to the urgency of the situation, as exemplified in the widely-reported claim in autumn 2018 that we had "12 years to save our planet" (Friends of the Earth 2018)? One answer is that we should do what we have always done, by analysing, nuancing, and challenging totalising narratives. "Deadline-ism", with its apocalyptic overtones, has been convincingly unpicked as scientifically, psychologically, politically, and morally unhelpful (Hulme 2020). Even the idea of "urgency" should be questioned, as Kyle Whyte has suggested, because it potentially occludes environmental injustices already experienced by indigenous peoples and threatens to worsen them through the top–down implementation of "solutions" (Whyte 2020). This latter term is common in technocratic approaches to climate change that view it as an urgent problem or a set of problems that can be solved by expertise. One role for the humanities is to ask difficult, perhaps unpopular questions, such as "what is a solution?" or "solutions for whom?" or "are solutions always desirable?" or even "is the idea that humans can "solve" climate change symptomatic of the kind of thinking that got us into this mess?" As Jeroen Oomen's article in this Special Issue shows, apparent solutions such as geoengineering are often proposed in ways that are inattentive to ethical and political complexity.

In the original call for this Special Issue, we suggested that, more overtly than weather, "climate and climate change are inevitably mediated and remediated through cultural forms: particular narratives, vocabularies, images, objects, and symbols". To put it another way, the key debates and framings of climate change are as much cultural as they are scientific. (This is not to suggest that science is not part of culture, or to downplay the vital work of climate scientists, of course.) We noted this as an opportunity for humanities scholars, but also as posing significant questions:

> How can we be attentive to climate change as story without supporting the idea that it is a mere fiction? How can we move from understanding climate change as politically and culturally produced to imagining ways in which it might be mitigated? How does an understanding of climate change's mediations remain alert to the brute facticity of environmental forces?

The seven articles that comprise this Special Issue, along with Julie Doyle's afterword, offer a range of responses to these questions and provide powerful evidence for the value of the humanities in the Anthropocene. A key problem with this concept, as we noted in the Special Issue call, is "that it can be used to suggest a monolithic species-wide agency that not only exaggerates human power

but also glosses over the considerable inequalities that generate climate change and to which it contributes". The environmental humanities can help to ensure that climate change is understood within its social–political contexts and that the conception and implementation of any potential "solutions" is socially just. Mediating climate change is not an ethically neutral or apolitical activity: Western representations of "climate migrants", for example, need to be treated sceptically, as discussed in Ben De Bruyn's article. If we do not understand the cultural politics of how climate change is framed, and the role of racialised, colonial, and extractivist ideologies in those framings, then we can hardly expect to move forward (Yusoff 2018). At the same time, the environmental humanities themselves are not immune to racialised and Eurocentric thinking. Addressing this is an ongoing task for researchers in the field.

This Special Issue makes no claim to offer a holistic understanding of how climate change is mediated, or to represent the diversity of possible perspectives. How could it, given that its subject permeates all aspects of human and nonhuman life? Our authors' objects of study range from popular visualisations of climate data (Anne Pasek), to Mesopotamian city states (Nigel Clark), to written and pictorial representations of future sea-level rise (Gillen D'Arcy Wood). Each contributor offers insights into how climate change is mediated, but perhaps just as important are the methodologies that they showcase. This is not an interdisciplinary collection of articles in that each offers a different disciplinary perspective; rather, each article reveals the value of an interdisciplinary approach. To take one example, Anna Boswell's article on the tuatara as both symbol and witness of environmental change draws on concepts and methodologies from fields including anthropology, multispecies ethnography, zoology, conservation, and environmental history to produce a compelling account attentive to Aotearoa/New Zealand's ecology, colonial history, and the importance of indigenous history and knowledge. The tuatara's significance and associated epistemologies emerge in a way that could not be achieved through a narrower perspective.

Where do these kinds of analyses leave us? Can they really affect "real-world" mitigation and adaptation strategies? What kinds of alternatives do we offer to technocratic "top–down" solutions? Libby Robin argues that "the environmental humanities work to shift the focus from "solving" complex problems like climate change, to *living with* problems and change, and to framing them in ways that recognize that climate change environments are unevenly distributed, geographically and socially" (Robin 2018, p. 2). More provocatively, Greg Garrard has written that "The Humanities disciplines are disfavoured by politicians and vice chancellors because the problems we address are never solved" (Garrard 2020, p. 1). It is hard to disagree, but the danger is that if we refuse to compromise with scientists and policymakers—if we refuse to speak their language—then we simply confirm our own marginality. A recent introduction to the environmental humanities suggests, in contrast to Robin and Garrard, that the field has "a crucial role to play in understanding and solving environmental problems" (Emmett and Nye 2017, p. 2). One way in which humanities scholars might play this role is by harnessing their attentiveness to complexity, creativity, and nuance to contribute to making change from the "bottom up" rather than the "top down". As Dale Jamieson puts it, "we will have to abandon the Promethean dream of a certain, decisive solution and instead engage with the messy world of temporary victories and local solutions while a new world comes into focus" (Jamieson 2014, p. 10). The arts and humanities are particularly well placed to develop innovative public engagement and co-creation activities around environmental issues. One example is analysed in the article by Rosamund Portus and Claire McGinn, which describes a soundscape workshop exploring the decline of bee populations and makes a strong case for expanding our conception of climate communications to include "collective imagining".

We can, then, identify four key ways in which the environmental humanities can respond to a climate emergency: (1) empowering members of the public, especially in disadvantaged groups, to develop their own creative responses to climate change; (2) collaborating with other disciplines, in part by helping to ensure that problems and solutions are framed within appropriate cultural contexts and are socially just (Holm and Brennan 2018; Kitch 2017; Little 2017); (3) teaching our students to

think critically about environmental representations and engagements, and particularly to question the still hegemonic carbon ideologies that contribute to global heating (Sultzbach 2019); and (4) publishing research that nuances and critiques grand narratives (e.g., apocalypse, salvation) around environmental change, including the rhetoric of emergency itself. In what remains of this introduction, we explore how our essays achieve this last objective through apprehending climate change historically and narratively. The Anthropocene is sometimes represented as a breach in planetary history, and perhaps it is, but it can only properly be understood in relation to other time scales. As the essays in this issue show, the environmental humanities enable us to cultivate more flexible spatiotemporal perspectives. These in turn allow us to create more nuanced analyses that reflect the complex entanglements of climate change, between the local and the global, the ecological and the geological, the past and the future, and the human and the nonhuman.

2. Climate Temporalities

Understanding, communicating, and responding to climate change involves challenges of scale, both spatial and temporal. Climate change is massively distributed in both these dimensions, yet also intimately local and present. Because our conceptions and perceptions of both time and space are bound up with our imaginations, memories, and the intellectual paradigms available to us, the humanities are uniquely able to analyse our capacities and incapacities for understanding climate change as a spatial and temporal phenomenon. The articles in this issue are particularly representative of the wide range of ways in which the environmental humanities can help us to face three of the major temporal challenges which climate change poses:

(1) How do we keep in view both the massive timelines of planetary history and the rapidity of climate change in the recent past, present, and future?
(2) How can the study of more recent histories and geographies be usefully accommodated in an unprecedented present?
(3) How do, and how should, we imagine a future that is defined by both difference from and continuity with the present?

Climate change requires us to think in terms of "deep time", but also to focus on much shorter durations. As Wood puts it, climate change entails "geological system changes terrifyingly compressed to the human timescale." (Wood 2019, p. 12) A disorientating shift in temporal perspective, from the long to the short and from slow to fast, is needed in order to reconcile, or at least find and keep a balance between, an understanding of climate change's place in deep time, and a sense of its status as an unprecedented modern phenomenon which calls us to act with urgency. The climate crisis requires us to "keep watch over [a] range of temporalities" like the tuatara, whose long lifespan combined with its vulnerability to modern climate change, Boswell argues, enable it to "focalise enigmatic timescales" (Boswell 2020, p. 9).

The appealing tuatara is one imaginative resource that can help us to focalise hugely varied timescales, but so too are so-called "natural disasters", and these in their own terribleness help to capture the "terrifying compression" of deep time that Wood describes. As Jeremy Davies has written, in terms which echo Wood's above, "To live through an eruption or an earthquake is to encounter geological time, the time of the planet's activity, compressed into a duration that is accessible to individual experience." (Davies 2019, p. 5) In his article, Wood advocates cultivation of a new catastrophism in order to keep in view both temporal scales: This historiography structures time as a long durée punctuated by shorter-term, more visible manifestations or expressions of longer geophysical processes, providing a necessary corrective to contemporary framings of disasters which de-contextualise them into "catastrophe[s] without catastrophism" (Wood 2019, pp. 2–3).

But how necessary is terror to a useful conception of the temporal and spatial scales of climate change? As Pasek points out, in her analysis of the famous "hockey stick graph" (one of the best-known attempts to combine the long durée planetary perspective with the speed, and therefore implied

urgency, of recent climate change), "scalar disconnections—the sublime, the hyperobject, romanticism, or horror—commonly fail to cultivate a sense of responsibility" (Pasek 2019, p. 5). If the abysm of deep time is already terrifying, and its compression into human timescales through climate change is also terrifying, then is taking a catastrophe like an earthquake or hurricane as the standard manifestation of this compression one level of terror too far for effective communication, at least if one's aim is "to cultivate a sense of responsibility"? One possible alternative is to turn attention to more modest ways in which deep time processes are made visible. For example, Boswell's observation that tuatara, a species older than dinosaurs, are "frequent flyers on aeroplanes" is a comedy-horror in miniature, a catastrophe on a more manageable scale than a volcanic eruption (Boswell 2020, p. 13).

Analysing potential affective responses to climate change's compression of much vaster timescales is an important and necessary step in understanding both the scale of the problem and the flaws in many of our existing strategies for coping with climate change, including disaster management, representation and communication, and biodiversity initiatives, as the articles by Wood, Pasek, and Boswell illustrate. As always, the next step after recognition, towards action, is less clear. On one hand, the tuatara, which is able to take one breath per hour, might inspire us to "conserve energy and "go slow""; on the other, as Boswell points out, this ability "to reduce carbon dioxide output" was learned by the tuatara over millions of years, whereas now neither we nor the tuatara have the luxury of time (Boswell 2020, p. 12).

As well as deep time, environmental humanities approaches to climate change invite us to think about more recent histories. This is not a shift from prehuman to human history—the amorphous realm of "deep time" includes many millennia of human existence, including the future; Wood, for example, views humans in our deep time context as "interglacial beings" (Wood 2019, p. 12). The difference between "deep time" and "historical" approaches to climate change might be represented by two quotations from Amitav Ghosh, each used in a different essay in this issue. Wood quotes from *The Great Derangement*, the collection of Ghosh's lectures on climate change, in which he contextualises climate change in the depths of deep time: "The events of today's changing climate . . . represent the totality of human actions over time" (Ghosh 2016, p. 115). De Bruyn, meanwhile, quotes from Ghosh's novel *Gun Island*, in which he contextualises climate change in the context of the Little Ice Age: "Couldn't it be said that it was in the seventeenth century that we started down the path that has brought us to where we are now?" (Ghosh 2019, p. 137) If the humanistic study of deep time helps us to grapple with conceptual demands placed upon us by climate change, the study of cultural and environmental history since the beginning of the Holocene explores the origins of those very conceptual frameworks within which we do the grappling.

The historical approach allows us to trace genealogies: It reveals historical attitudes, practices, and institutions that have brought about climate change as a material-discursive phenomenon, one which incorporates physical and social processes, cultural mediations, and proposed solutions. This genealogical approach can easily court accusations of anachronism and presentism; whereas a sufficiently nuanced historicism can dispense with the former, the latter is a trickier issue for historical approaches to climate change. They risk being seen as a reductive "study of sameness", as Lynn Hunt has scathingly labelled the presentist approach (Hunt 2002). Perhaps the most productive route for the historically-focused environmental humanities will be through an unapologetic "strategic presentism", a methodology theorised in a 2016 special issue of *Victorian Studies*. This kind of presentism does not mine the past for moral lessons or narrow forms of "relatability" but aims to view "the past as something other than an object of knowledge that is sealed off, separated from the present by the onrush of sequential time" and "think critically about the past in the present in order to change the present . . . [and to] imagine alternative futures" (Coombs and Coriale 2016, p. 88).

Tracing genealogies allows us to uncover assumptions in our perception and responses to climate change that might otherwise go unnoticed or be taken for granted as "natural", rather than historically and socially contingent. Oomen, for example, identifies a "narrowing of vision" that he argues is a necessary condition "that makes it possible to consider climate engineering". Counterintuitively,

this narrowing of vision is based in a "global epistemology" that emerged in the mid-twentieth century (Oomen 2019, p. 7). Recognising this epistemological foundation allows us to question the supposed naturalness of the holistic worldview, as well as the potential shortcomings of the way it "privileges a conversation about the global averaging of climate" (Oomen 2019, p. 4).

Clark goes much further back, to the 3rd and 4th millennia BCE, the mid-Holocene. Clark makes striking genealogical claims for a wide range of modern responses to climate change: He suggests, for example, that when we think in terms of digitally surveilling migrants or of imposing carbon taxes, "we are still working within the notational logic of the first bureaucratic states", when writing itself developed as an indirect response to climatic upheaval. "[E]xcavating the reworked material ground of the ancient world," Clark argues, "bring[s] to light something of the "grounds" of cultural and cognitive processes that we still use to make sense of a shifting world." (Clark 2020, p. 3) But a historical perspective on climate change has another use, too: We can look to the past not just to discover where our present came from, but to find models for different ways of thinking and behaving. As well as tracing historical continuities, Clark also suggests that keeping in mind the material origins of walls and words in clay might help to adjust our current drift down "disembodied, dematerialized pathways" (Clark 2020, p. 13).

Looking to historical models, then, is one way in which the environmental humanities approach another temporal challenge posed by climate change, that of imagining a future defined by both difference from and continuity with the present. Thinking ahead is necessary in order to predict, and therefore potentially avoid or mitigate, the worst consequences of climate change; but we must also be able to imagine the future we want, in order to begin trying to bring it about. We can use mathematical models to project future temperature change, sea level rise, and biodiversity loss, but predicting how climate change might impact every sphere of social and cultural life in the next few years, let alone in one hundred or even one thousand years, is a challenge of the imagination. So too is making the causal connection between our actions now and a number of projected futures, just as it takes the imagination to connect the effects of climate change we see around us today to emissions and other behaviours in the past.

Historical precedents can help us to model the future, and so can other creative narrative forms. De Bruyn explores how cli-fi novels have reflected upon recent migration "crises" in Europe in order to speculate about future displacement caused by climate change. He draws out how these novels "rethink apocalyptic imaginaries" and thus demonstrates a way in which literary analysis can make an important contribution to the ongoing debate over whether apocalyptic or hopeful visions of the future are preferable tools for thinking about climate change (De Bruyn 2020, p. 4). By comparing several novels' divergent portrayals of future climate migration and their varied ethical implications for the present, De Bruyn highlights a point which Garrard has recently argued is essential to keep in mind when contemplating hypothetical futures, and which cli-fi novels themselves tend to occlude: that "the fantasy of a one-to-one reciprocity between two presents, informing in turn the notion of a moral responsibility to prevent … dystopia, skims over the reality that both history and futurism are unavoidably *interpretive*" (Garrard 2020, pp. 2–3). Just as there is no consensus on what the future will look like, and no consensus on what the past was like or what it meant, so there will never be a clear, objective view of the historical present.

Even with no prospect of discovering a single "true" narrative, the challenge of cognitively connecting past, present, and future is a vital one for climate change communication. One of the strengths of Ed Hawkins' popular climate spiral animation in comparison to the hockey stick graph, Pasek points out, is its kinetic representation of "historical momentum": Because it moves, it implies the continuation of its trends into the future (Pasek 2019, p. 9). It has been argued that a disjuncture between past and future, as visualised in the majority of graphs used by the Intergovernmental Panel on Climate Change which either begin or end at the present, might be a valuable rhetorical tool as it "leaves a space open for justice" and designates the present as "the hinge on which everything hangs"; but losing the sense of momentum risks losing the sense of urgency (Callaway 2014, pp. 13–14).

Similarly, in their article on using soundscapes to imagine the future, Portus and McGinn, following Doyle, observe that photographs convey "a powerful sense of temporal past-ness" and thereby lose their purchase upon the present (Portus and McGinn 2019, p. 1); the photoshopped images of the future created by Climate Central, which Wood discusses in his article, attempt to use juxtaposed visual images to create a narrative of future change but similarly miss the crucial chaos in between. In contrast, the sound-pieces created in Portus and McGinn's soundscape workshop, although they mapped time in diverse ways, shared with each other as well as with the spiral gif a durational quality which enabled evocation of "the trajectory we are on" (Portus and McGinn 2019, p. 9).

Something all seven articles in this issue demonstrate is a need for a nuanced historical perspective that meaningfully connects past, present, and future. The environmental humanities can help to foster this perspective through their discovery and construction of new narratives, including emblems for the compression of deep time into human time, historical genealogies, and visions of the future; and through their analysis and critique of existing narratives, which illuminates the intellectual and ethical implications of such mediations and the affective responses they produce.

3. Climate Narratives

If one of the great challenges of climate change is finding ways to move between human and planetary scales, another thorny issue is how to distinguish the signals of human impacts from the background noise of the climate system's own ceaseless shifting and pulsing. As Earth system scientists impress upon us, "detailed paleo-records show that the Earth is never static . . . variability abounds at nearly all spatial and temporal scales" (Steffen et al. 2004, p. 295). But the rumbling backdrop of the planet's own climatic inconstancy makes for more than just a messy tangle of human and nonhuman influences in the recent climate record. It also means that the very languages, storylines, and symbols we reach for to try and make sense of the current predicament may already bear the traces of lives lived amidst the variability of climate and other Earth processes.

And so when Wood seeks to disrupt the "delusional" belief that we can muddle through today's escalating climate disasters with a more catastrophic reading, he self-consciously reaches for earlier narratives that were already couched around planetary upheaval. Delving into "the crisis decade of the 1840s", he turns to the work of renowned critical social thinker Friedrich Engels and the lesser known mathematician Joseph Adhémar (Wood 2019, p. 2). Whereas Engels drew attention to the abysmal health impacts of early industrially-polluted atmosphere, Adhémar offered a prescient theory that mass-melting of glaciers periodically caused "revolutionary" sea level rise on a planetary scale. While the two thinkers probed very different contours of cataclysm, Wood argues, they both inherited and reworked a contemporary language of scientific catastrophism that had emerged from amassing evidence that the physical Earth had a deeply tumultuous history.

Those who warn of cascading climatic transformation are still routinely taken to task for inciting stultifying terror and fatalism rather than commended for encouraging us to come to terms with the inherent instability of our planet. Whereas Wood shines light on a good century and a half of explicit narrating of Earthly volatility, Clark delves into a deeper and murkier imprint of climatic variability on the very means by which we communicate. Focusing on the impact of a significant moment of global climate change around five thousand years ago, as we saw above, he revisits archaeological and paleoclimatic evidence that this threshold shift was implicated in the emergence of written language and the use of numbers. If the very modalities through which we now script climate stories, enumerate climatic impacts, and compose planetary scenarios are themselves bound up with climatic transition, in this way, then there is a sense in which our very mediation *of* climate change is also mediated *by* or *through* changing climate.

But literacy and numeracy are themselves late additions to the human habit of storying our way through whatever the world throws at us. In his celebrated 1936 essay "The Storyteller", Walter Benjamin connects the collective wisdom inhering in the traditional narrative form to the immersion of "the tiny, fragile human body" in the vast temporal movements and periodicities of our

planet (Benjamin [1955] 2007, p. 84): "One must imagine the transformation of epic forms occurring in rhythms comparable to those of the change that has come over the earth's surface in the course of thousands of centuries" (Benjamin [1955] 2007, p. 88). Ethnographic evidence invites us to read this literally, for there are accounts of long-term inhabitants of particular regions relaying information across many millennia. In the case of Australian Aboriginal people, relates Indigenous studies scholar Marcia Langton, "There are stories that tell of the rising of the oceans around 7000 years ago, erupting volcanoes 20,000 years ago, and the very different climate and landscapes of the long distant past" (Langton 2018, p. 84). If such tales remind their audience of the changeability of the Earth, so too do they often serve as conduits of advice and insight for dwelling in an uncertain cosmos.

Once we have begun to bring together the storying of the Earth and the earthing of stories in this way, there is no obvious limit to their mutual implication. Over the hundreds of thousands of years in which humans were exclusively hunter-gatherers, it has been noted, animal trackers learned to read their environment as a collection of signs that told stories—including speculative stories that hypothesised what an animal might yet do (Liebenberg 1990, p. 29). Venture back still further and we arrive at the evolution of primate bipedalism, which, through freeing up the hands and raising the face, enabled gestures of mime that have been viewed as the prelinguistic origin of hominin storytelling (McBride 2014). Hominins—humans and their immediate ancestors—in turn inherit a much more ancient animal body plan in which the sensory organs are concentrated towards the "front" end. Combined with a capacity for self-directed mobility or locomotion, notes sociologist Bronislaw Szerszynski, "cephalization" equips the animal with a basic ability for self-sensing in time and space (Szerszynski 2016). Having a head and thus being able to "head out" and "head home", we might say, is the rudimentary requirement of living a storied existence.

Attending to the animal's ability to negotiate and make sense of its milieu, in this way, we locate our own knack of storytelling in the broader sweep of evolution. In the process, the preconditions of human cultural–linguistic expression join a great succession of planetary events that have lured, nudged, and jolted life into novel forms and whole new levels of organisation. Such a perspective also encourages us to consider how other evolutionary lineages, different body plans, and alternative sensory arrangements enable other ways of experiencing the dynamic Earth. As philosopher of science Vinciane Despret and ecologist Michel Meuret propose, living beings in all their multiplicity extend the capacity of the Earth to sense and express itself—a point for which they take the usually unsung sheep as their example. "The memory of the flock", write Despret and Meuret (2016, p. 33), "gives to the land a part of its existence. By the concrete memory of the mouths, the eyes, the guts, the bodies, the legs, and the feet, the flock multiplies the ways lands, paths, bushes, springs, and rocks exist".

By the same logic, a planet undergoing or driven towards catastrophic change is one on which this organismic manoeuvring, sensing, and remembering can be seriously compromised. "Climate derangement" (see Wood 2019, p. 4; Pasek 2019, p. 6), in this regard, is far from a matter for human actors alone. Under conditions of accelerating climate change, observe Portus and McGinn (2019, p. 3), the flowering time of plants alters, disrupting the signals to which bees and other pollinators respond. It is an upsetting of the finely tuned mediation between flora and insects that has in turn sparked outcries over the fate of bees that have been expressed in the contemporary mass media of inter-human communication.

Regarded with the gravity they deserve, accounts of the ways other organisms register and respond to the cues of climate have the potential to reconfigure the way our own species conceives of its shifting climatic milieu. In the case of Boswell's tuatara, it is not only an exceptionally slow respiratory rate and a life span running into centuries, but an ability to sense sunlight though a vestigial "third eye" that enables the species to serve as such an intriguing witness "to realms of climate that are beyond human sensory perception" (Boswell 2020, p. 9). Well before Western scientists came to a full appreciation of the saurian's unique qualities, Boswell reminds us, Māori revered the tuatara as a bearer of ancient wisdom and elected it a guardian of sacred spaces.

Like Portus and McGinn's honeybees, Boswell's tuatara potentially serve as portals or conduits from a human's-eye-view to a far more encompassing vision of planetary change. Or, to take it from another angle, we might view such creatures—*all* living things in their singularity and specificity—as vital media though which the Earth senses itself and probes its own possibilities. The Māori bond with the tuatara points us in the direction of other Indigenous peoples or long-standing dwellers-in-place who value the ability to experience the world from the perspective of other organisms (Vivieros de Castro 2004). As well as evincing a deep appreciation of the intrinsic value of other forms of life, such a capacity to circulate between different organismic standpoints, suggests geographer Adam Bobbette, can also provide kind of flexible and experimental infrastructure for living with volatile Earth processes (Bobbette 2019, pp. 187–90).

If being prepared to imaginatively move between different body plans and sensory assemblages might help human agents in their improvisational struggle with wildly variable climate, as Bobbette infers, so too can it help us to live with the fear and grief that accompanies environmental upheaval. In this regard, we would do well to consider the tension experienced by scientific researchers as they try to steer between the rigorous analytic demands of doing "hard" science and the anguish they feel over the loss of lifeforms or landforms around which their working lives revolve (Head and Harada 2017; Gordon et al. 2019). For however valuable it may be to expand our sensory registers, without creative, ritualised, and collectively supportive ways of dealing with the devastation of cascading climate change, we risk intolerable levels of exposure.

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