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# Eco-anxiety and environmental history: A forum[1]

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## Abstract

Environmental historians, like others who study and write about the environment, have long worked with the emotional and psychological impacts of environmental change, including grief, anxiety, rage and despair. But the increasing prevalence of ecological anxiety in recent years, prompted by new indicators of planetary distress, suggests the need for new histories which address humans as subject together with other species to these disruptions in Earth systems. We suggest that disturbed Earth systems demand histories that are more fluid and more expansive, and more aware of human vulnerabilities. We present several possible modes for these histories, approaching human vulnerability with the languages of emotion and mental illness and through acute affective responses to the production of historical narratives. What, asks each contribution, do we do with these anxieties and emotions? How do we write the psychological and affective dimensions of extreme climates and weather events in contemporary histories? Implicitly, and sometimes explicitly, temporal and spatial scales are modulated through these case studies of emotional entanglements and vulnerability.

**Keywords:** ecological anxiety, planetary history, climate, disaster, emotion

1 Earlier versions of the contributions to this paper were presented at the seminar 'Emotion and Anxiety in Environmental History' hosted by the Sydney Environment Institute, University of Sydney, in collaboration with the Australian and Aotearoa New Zealand Environmental History Network on 28 October 2021. The authors would like to thank Libby Robin and the anonymous reviewers for their feedback.

# Ecological anxiety, more-than-human emotion and environmental history

## Andrea Gaynor and James Dunk

In 2021–22, a highly contagious second wave of Covid-19, and then a third and fourth, were joined on the world stage by a string of intense climate events. Earth seems increasingly ringed with fire, battered by wind, bleached and parched, drowned and disordered. As we see, hear and breathe these stirrings and visitations—direct and mediated—it is getting harder to remain indifferent. Ecosystem and Earth system disruptions are now visibly, palpably gripping the planet, reaching even those of us who were once buffered from such effects by our relative wealth and privilege.

We are seeing, in turn, a significant shift in thinking: what were once taken to be 'environmental' problems and concerns are beginning to be understood as fundamentally human crises. At the same time, human lives are increasingly experienced within a community of life and against the backdrop of planetary systems that are subjected to disruptions wrought by certain human actors and systems. While few might hear or read the words Anthropocene, technocene, plantationocene, capitalocene, or chthulucene, large sections of the global population have become all too familiar with the lifeworlds implied by these unwieldy words: worsening heatwaves, news of extinctions, arctic melt, plastics in the bellies of seabirds and microplastics in human organs.[2] Many are conscious of living in a planetary crisis.[3]

How, as historians, are we to respond to these developments? How are the historical stories we choose to tell altering and intertwining under the weight and pressure of planetary disruptions? The short interventions that follow show some of the ways historians are addressing these challenges by pointing to the kind of empirical and conceptual work in environmental history which we feel the mounting general ecological anxiety demands. Collectively, they provide a suggestive survey of some of the different responses being made by environmental historians: to review past responses to environment-related anxiety, disentangle the complex emotions bound up in contemporary unnatural disasters, explore the powerful effects and feelings involved in adjudicating histories of extractive industries and areas invested in them, and highlight the themes of scale and vulnerability in the changing interpersonal/emotional landscape of environmental history. In doing so, they indicate possible

2 Donna Haraway, 'Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin', *Environmental Humanities* 6, no. 1 (2015): 159–65, doi.org/10.1215/22011919-3615934; Marco Armiero, 'The Case for the Wasteocene', *Environmental History* 26, no. 3 (2021): 425–30, doi.org/10.1093/envhis/emab014.003; Oliver López-Corona and Gustavo Magallanes-Guijón, 'It Is Not an Anthropocene; It Is Really the Technocene: Names Matter in Decision Making under Planetary Crisis', *Frontiers in Ecology and Evolution* 8 (2020), doi.org/10.3389/fevo.2020.00214.
3 Cameron Muir, Kirsten Wehner and Jenny Newell, eds, *Living with the Anthropocene: Love, Loss and Hope in the Face of Environmental Crisis* (Sydney: NewSouth, 2020).

directions for future research by identifying new resources and narratives which may be useful for navigating the difficult terrain of more-than-human lives in an inescapably planetary era.

These stories broadly sit within a broader turn among historians towards matters of emotion. Emerging in the 1980s in tandem with cultural history and gender history, as well as a wider scholarly interest in human emotions, the history of emotions has only recently gained all the trappings of a distinct sub-field.[4] At the same time, historians from other sub-fields have begun to advocate for and employ a more rigorous focus on emotions. While environmental historians have long acknowledged the role of emotions such as love and fear in shaping human activity within a more-than-human world, emotions are only gradually being given greater prominence within environmental histories, with a few works directly engaging with the theorising taking place over in the history of emotions. In 2019, for example, Andrea Gaynor, Susan Broomhall and Andrew Flack sought to introduce and explain the history of emotions approaches for environmental historians, and provide an example of engagement between the two areas in tracing human–frog relations over time.[5] Daniel Macfarlane drew on notions of 'emotional regimes' in his analysis of how emotions shaped the re-engineering of Niagara Falls, and the Network in Canadian History & Environment issued a call for a series on *Emotional Ecologies* in January 2023.[6] Other environmental histories foregrounding emotions have looked beyond the history of emotions scholarship. In an early appeal to environmental historians to consider emotions, Tom McCarthy turned rather to psychology in addressing big questions on the role of emotion in generating and sustaining consumption in the global North.[7] Dolly Jørgensen takes her cue from a range of history of emotions and interdisciplinary approaches in exploring how guilt, fear and grief have shaped human responses to non-human animal extinction, while Scott McKinnon and Margaret Cook have engaged with both history of emotions and memory studies in their work on the role of emotions in shaping collective memories of unnatural disaster events.[8] We are still experimenting with ways in which to rigorously combine the study of emotion and environment in historical scholarship; the short interventions

4 Katie Barclay and Peter N. Stearns, 'Introduction', in *The Routledge History of Emotions in the Modern World*, ed. Katie Barclay and Peter N. Stearns (London: Routledge, 2022), 2.

5 Andrea Gaynor, Susan Broomhall and Andrew Flack, 'Frogs and Feeling Communities: A Study in History of Emotions and Environmental History', *Environment and History* 28, no. 1 (2022): 83–104, doi.org/10.3197/096734019X15740974883861; see also Andrea Gaynor, 'Environmental History and the History of Emotions', Histories of Emotion research group, 16 June 2017, historiesofemotion.com/2017/06/16/environmental-history-and-the-history-of-emotions, accessed 5 June 2023.

6 Daniel Macfarlane, 'Saving Niagara from Itself: The Campaign to Preserve and Enhance the American Falls, 1965–1975', *Environment and History* 25, no. 4 (2019): 489–520; Sarah York-Bertram and Jessica DeWitt, 'Emotional Ecologies: Where We're Going and Where We've Been', Network in Canadian History & Environment, 17 January 2023, niche-canada.org/2023/01/17/call-for-submissions-emotional-ecologies/, accessed 13 June 2023.

7 Tom McCarthy, 'Follow the Buyer', in Adam Rome et al., 'What's Next for Environmental History', *Environmental History* 10, no. 1 (2005): 62.

8 Dolly Jørgensen, *Recovering Lost Species in the Modern Age: Histories of Longing and Belonging* (Cambridge: MIT Press, 2019); Scott McKinnon and Margaret Cook, 'Five Days of Swirling Fury: Emotion and Memory in Newspaper Anniversary Reports of the 1974 Queensland Floods', *Emotion, Space and Society* 35 (2020): [100685].

in this collection seek to contribute to this experiment not always by adopting history of emotions approaches, though some also do that, but by pointing to ways in which histories can usefully respond to contemporary environment-related emotional turmoil, and in particular eco-anxiety.

Anxiety and fear have featured prominently among the small number of environmental histories that have included a focus on emotion. For example, Katja Bruisch has demonstrated that the desire to transform peatlands into agricultural lands was driven in part by culturally shaped emotional responses to marshy ecosystems, including fear as well as disgust.[9] Indeed, some of the earliest environmental histories to consider emotions more substantively focused on fear and anxiety, particularly among colonisers whose ambitions were threatened by flooding, soil erosion and localised anthropogenic climate change.[10] In colonial New Zealand, for example, anxiety was stoked by scientific writings and its moral imperatives were sketched out in political debates; ultimately it drove action in the form of forest conservation.[11]

Our contributions take their starting point not so much from a desire to trace historical emotions for their own sake, but to explore how historians might address the current proliferation of often unacknowledged eco-anxiety, defined by an American Psychological Association report as 'the chronic fear of environmental doom'.[12] Like history, anxiety is a temporally informed concept, relating to a feeling of unease or distress about what may occur. Many experience eco-anxiety as waiting for an uncertain future, whether that is in the short term—exactly when a cyclone will strike or how high floodwaters will rise—or over a longer time frame: a generalised dread about life on a warming planet. The rate of unfolding can feel slow; it can also feel too frenetic, that the landscape is shifting erratically through intense moments of high drama. This temporal uncertainty raises challenges for historians who have tried to interpret the past by imposing order on sequences of events and identifying discrete periods. The Anthropocene makes us return to the past with different questions and approaches.

9 Katja Bruisch, 'Nature Mistaken: Resource-Making, Emotions and the Transformation of Peatlands in the Russian Empire and the Soviet Union', *Environment and History* 26, no. 3 (2020): 359–82.

10 See, for example, Richard Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600-1860* (New York: Cambridge University Press, 1995); James Beattie, 'Environmental Anxiety in New Zealand 1840–1981: Climate Change, Soil Erosion, Sand Drift, Flooding and Forest Conservation', *Environment and History* 9, no. 4 (2003): 379–92; James Beattie, *Empire and Environmental Anxiety: Health, Science, Art and Conservation in South Asia and Australasia, 1800–1920* (Basingstoke: Palgrave Macmillan, 2011); James Beattie and Ruth Morgan, 'Engineering Edens on "This Rivered Earth"? A Review Article on Water Management and Hydro-Resilience in the British Empire, 1860s–1940s', *Environment and History* 23, no. 1 (2017): 39–63.

11 Beattie, 'Environmental Anxiety in New Zealand 1840–1981'.

12 Susan Clayton, Christie M. Manning, Kirra Krygsman and Meighen Speiser, *Mental Health and Our Changing Climate: Impacts, Implications, and Guidance* (Washington, DC: American Psychological Association and ecoAmerica, 2017), 68.

In 2020 one of us—Andrea Gaynor—published a conversation with other historians exploring the responsibility and nature of historical work in 'urgent times'.[13] In that conversation, Ruth Morgan argued that the environmental crises that made these times urgent elicit powerful feelings—grief, fear and shock—and that a significant part of the power of historical story-telling was its capacity to meet these emotions and elicit others.[14] In this forum, we probe the question of how historians might approach those emotions as complex, historical states. The case studies and commentary presented here are therefore intended to serve as a response to the problem of how to write histories in anxious times. They explore the emotions of those living with climate change, floods and intense heat. Emerging from the general sense of endangerment and instability which characterises the present historical moment, these stories point to rising awareness of the ecological systems and cycles in which human actors, like those of other species, have always been bound, moving across the twentieth century and into the present. We suggest that attending to these shifts may help historians write narratives that better respond to the emotional instability and acute ecological reality of the present. This is story-telling with a therapeutic intention and can be of particular utility for the young, who are currently suffering so intensely from eco-anxiety.

These studies are centred on three particular sites of emotion in Australian contexts: the reception and interpretation of historical narratives in the public sphere, so-called 'natural' disasters, and racial and gendered diagnoses of heat-related emotional disorders. Always a continent of climatic variability, changes in global systems have heightened the extremes of these patterns in Australia, leading to a Black Summer of destructive bushfires in 2019–20 on the east coast, followed by two years of record-breaking flooding. Although its human population has mostly been buffered from the worst effects of climate change by general high standards of living, high-quality infrastructure and an effective emergency response capacity, Australia sits as the nineteenth most vulnerable nation on the Climate Risk Index for 2000–19.[15] The three glimpses of different emotional orders—and presumed disorders—associated with more-than-human entanglements of labour, disaster and rural life, as well as historiography itself, relate to Australia but have resonance for other contexts. Each piece interrogates, in its own way, the nature and limits of agency as human actors are drawn into these dramatic environmental transformations.

The final element of this forum homes in on the question of scale, asking how historians can reconcile the local and subjective with the planetary—Earth systems such as atmospheric and oceanic circulation and the cycling of nitrogen and phosphorus,

13 Katie Holmes, Andrea Gaynor and Ruth Morgan, 'Doing Environmental History in Urgent Times', *History Australia* 17, no. 2 (2020): 230–51, doi.org/10.1080/14490854.2020.1758579.

14 Ibid., 246.

15 David Eckstein, Vera Künzel and Laura Schäfer, *Global Climate Risk Index 2021: Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2019 and 2000 to 2019* (Bonn: Germanwatch e.V., 2021), www.germanwatch.org/en/19777, accessed 1 December 2022.

and a rising, anxious knowledge of disruptions in these systems. It proposes a synthesis in the form of histories that are local and intimate, foregrounding human emotion and vulnerability within a planetary frame (through engagement with Earth systems sciences but also by attending to the growing presence of the planetary in everyday experience). This approach throws into relief the operations which lie beneath the eco-anxiety rising around us. They show rational human agency, overly and unduly elevated as it has been—including in the writing of history—in the harsh light and thick smoke of rampant bushfires and the floodwaters and mud thrown up by shifting patterns of rainfall: ecological circumstances in which human agency is revealed to be fragile, imperfect and steeped thickly and inevitably in emotion.

# Anger

## Nancy Cushing

We have all felt anger and have likely applauded what we see as its righteous form. It was anger that drove Black Lives Matter protests around the world after the murder of George Floyd in 2020 and white-hot rage which made Australian women stand up, speak out and declare 'Enough' in March 2021 after shameful sexual violence was exposed in and around the federal parliament.

My focus here is on anger that is equally righteous for those who feel it: the anger being expressed by those who believe themselves to be wrongfully harmed by measures taken to mitigate climate change. In Australia, this anger received attention from politicians and the media in the 2010s and early 2020s, arguably shaping both the policy of the Australian Labor Party and the Morrison Coalition government's 'Australian Way' plan to achieve net zero emissions by 2050.[16] However, it has largely been overlooked by scholars who, in keeping with other studies of the emotions associated with climate change, have concentrated on the anger directed *against* the practices which have created and exacerbated the climate emergency.[17]

My entry point into this issue is research on the 1909 Coal Monument located at the mouth of the Coquun (Hunter) River in New South Wales, on unceded Awabakal country. In 1804, the tiny settler colonist outpost established at this site, Muloobinba, was given the name Newcastle, reflecting its foundational association with coal mining, one which has been enduring.[18]

16 Commonwealth of Australia, Department of the Prime Minister and Cabinet, 'The Plan to Deliver Net Zero: The Australian Way' (2021), apo.org.au/sites/default/files/resource-files/2021-10/apo-nid314748.pdf, accessed 5 June 2023.
17 See, for example, Jochen Kleres and Åsa Wettergren, 'Fear, Hope, Anger, and Guilt in Climate Activism', *Social Movement Studies* 16, no. 5 (2017): 507–19.
18 Nancy Cushing, 'Coalopolis to Steel City: Perceptions of Newcastle 1797–1859', *Journal of Australian Studies* 22, no. 57 (1998): 61–2.

I unwittingly became a target of defensive anger in August 2019 when I issued an invitation to an online group for those interested in Newcastle's past to a talk I was giving about the monument. I explained that the presentation would speculate on whether the monument's time was up, whether, given coal's role in global warming, its likeness in black marble should no longer literally be placed on a pedestal in a public park. Instead, I proposed, the Coal Monument could be retired to a museum and replaced with a counter-monument made of actual coal, which would gradually decay and eventually disappear.[19] Given the policies of governments outside Australia and corporate policies within, it was clear the coal mining industry was in terminal decline. My proposal was intended as a means of marking a sense of loss, much as earlier memorials to coal mining disasters had done, albeit in a temporary form.

My sincere invitation was not well received. I was called names. I was derided as an out-of-touch academic and an outsider who could not possibly know anything about Newcastle's history. Angry commenters on the site declared that coal should not fall; that a century after active coal mining in the city of Newcastle had ceased, coal past and present was still central to local identity and community pride.

The same anger I experienced had been expressed earlier that year during the federal election, when the sitting Australian Labor Party member Joel Fitzgibbon came very close to losing the Hunter constituency, one held by Labor since 1910, to One Nation candidate Stuart Bonds. This occurred inland from Newcastle in the Hunter Valley, a region so disfigured by open-cut coal mining that it led Glenn Albrecht to develop the term 'solastalgia' to describe the pain of seeing a familiar place made strange.[20]

Even though Fitzgibbon championed the coal industry, many local voters had decided his party was not to be trusted with coal's future. Having assumed government at the federal level in 2022, Labor continues to occupy an awkward position, wanting to differentiate itself from the pro-coal policies of the former Liberal National Party coalition administration, but fearing the label of being anti-coal.

What drives this angry response? There is a great deal of uncertainty about the future generally but in particular for coal mining communities. Rather than the straightforward shift faced by consumers of fossil fuels to alternatives like solar or wind for power, heating and transport, for coal miners, decarbonisation means reshaping their culture and identity, even challenging their sense of the past. For them, coal phase-out entails, in Phil Johnstone and Sabine Hielscher's words, 'complex processes of social, cultural and material re-orderings' which threaten social networks and, I would add, their sense that they uphold a proud tradition.[21]

19 See Nancy Cushing, '#CoalMustFall: Revisiting Newcastle's Coal Monument in the Anthropocene', *History Australia* 18, no. 4 (2021): 782–800.

20 Glenn Albrecht, 'Solastalgia', *Alternatives Journal* 32, no. 4/5 (2006): 34–6.

21 Phil Johnstone and Sabine Hielscher, 'Phasing Out Coal, Sustaining Coal Communities? Living With Technological Decline in Sustainability Pathways', *The Extractive Industries and Society* 4, no. 27 (2017): 458.

In the Hunter Valley of the nineteenth century, the geography of underground mining meant that many coal miners lived in isolated communities dominated economically and culturally by their industry. Residents developed strong local identities, viewing outsiders as capitalists seeking super profits by denying the dignity of their labour, or as weaklings who knew little about the strength, bravery and endurance required to raise the coal upon which the economy relied. Continuing traditions brought from coal mining regions in the United Kingdom, these communities developed their own values and pride in their work, and their solidarity was expressed in early trade unionisation.[22] From this grew emotional communities, linked by affective bonds, sharing systems of feeling and a sense of how emotions should properly be expressed.[23] Anger, known to be associated with both a sense of injustice and collective action, was part of the shared language of this emotional community, fuelling resistance to the bosses.[24]

Pride and anger were not their only publicly expressed emotions, however. Grief was also an element of this emotional community. They built memorials to sudden disasters caused by lethal gas explosions and cave-ins, marked their anniversaries with solemn ceremonies and lived with the grief these obelisks and memorial gates represented as an enduring presence. Now, confronted with the slow disaster of climate change, grief is again present. This was expressed by a resident of another coal region, Appalachia in the United States:

> There is also a sense of grief that comes along with [the end of coal mining], you know, coal mining is really a part of the culture here and it's interwoven into the way people feel about themselves and their own identity and their identity as a community. [25]

In the Hunter Region, rather than sitting with this sense of loss as grief, it is the other familiar emotion—anger—which has dominated in the public sphere. Anger is considered an activating emotion, one which motivates attempts to lessen a perceived threat, typified as the fight response.[26] It is also a form in which men, who strongly dominate the coal mining industry, have been socialised to express their feelings ahead of worry or dread.[27] This anger has been turned against the messengers, and

22 For treatments of local political and labour activism, see *Radical Newcastle*, ed. James Bennett, Nancy Cushing and Erik Eklund (Sydney: UNSW Press, 2015).

23 Barbara Rosenwein, 'Worrying about Emotions in History', *American Historical Review* 107, no. 3 (2002): 842.

24 Samantha K. Stanley, Teaghan L. Hogg, Zoe Leviston and Iain Walker, 'From Anger to Action: Differential Impacts of Eco-Anxiety, Eco-Depression, and Eco-Anger on Climate Action and Wellbeing', *Journal of Climate Change and Health* 1 (2021): 2.

25 Sanya Carley, Tom P. Evans and David M. Koniskya, 'Adaptation, Culture, and the Energy Transition in American Coal Country', *Energy Research and Social Science* 37 (2018): 136.

26 Stanley et al., 'From Anger to Action', 1.

27 Kristin Haltinner, Jennifer Ladino and Dilshani Sarathchandra, 'Feeling Skeptical: Worry, Dread, and Support for Environmental Policy Among Climate Change Skeptics', *Emotion, Space and Society* 39 (2021): 4. Men's greater resort to anger was also found in a study of responses to climate change in island settings, especially for men in the United Kingdom and New Zealand, who felt that they were being prevented from achieving personal success (M. du Bray, A. Wutich, K. L. Larson, D. D. White and A. Brewis, 'Anger and Sadness: Gendered Emotional Responses to Climate Threats in Four Island Nations', *Cross-Cultural Research* 53, no. 1 (2019): 74).

the measures held out as being ameliorative. With their identities founded in a proud tradition of coal mining, and of joint action to improve wages and conditions, many are again ready to fight. Not believing in the possibility of a just transition, some seek to denigrate and delay any transition at all, and have been encouraged in this position by politicians who respond to their rage with promises that coal mines will 'stay open, remain competitive and adapt … for as long as global demand allows'.[28] Several studies of coal mining regions in the United States have found that right-wing populist movements have encouraged the direction of anger linked with dying industries towards environmentalists and environmental regulations, blaming them for preventing a return to an imagined past of secure employment and self-esteem.[29] In Australia also, climate change is understood by many through a partisan lens, and the emotions around it are used to shore up political power.

As it happened, none of the angry respondents came to my talk. I had been a bit worried about what would happen if they did, and had even considered whether to alert the university security staff. This is one of the most dangerous things about anger: it can cut off communications. On one side, the angry are rendered unable to hear other points of view or to participate constructively in shaping a path to a sustainable future. On the other, people are intimidated, afraid and do what they can to avoid possible confrontations. I had hoped to open a conversation about how the emotional aspects of the end of coal could be recognised through the creation of sites of mourning and remembrance. But dialogue and exchange are less likely to be found when the red mist of anger sits between the parties and, in this case, none occurred.

## Grief

### Margaret Cook

As moments of crisis for societies, disasters bring culture and human relationships, with their environment and emotions, into sharp relief. While it is perhaps obvious that floods and bushfires that cause the loss of lives and property may cause grief and sorrow, the emotions experienced are far more complicated than perhaps first perceived. They have a temporal dimension; the emotions can be raw long after the fires go out.

28 Scott Morrison, 'The Australian Way: Opinion', 26 October 2021, pmtranscripts.pmc.gov.au/release/transcript-44121, accessed 5 June 2023.

29 Erik Kojola, 'Bringing Back the Mines and a Way of Life: Populism and the Politics of Extraction', *Annals of the American Association of Geographers* 109, no. 2 (2019): 377. See also Leaf Van Boven and David K. Sherman, 'Elite Influence on Public Attitudes about Climate Policy', *Current Opinion in Behavioral Sciences* 42 (2021): 86.

I draw here on my oral histories of those who experienced the 2011 floods in Brisbane (Meanjin), a city on the lands of the Turrbal and Jagera people, with a population of 2.2 million.[30] Christine Eriksen and Scott McKinnon's analysis of interviews conducted by Mary Hutchinson was used similarly, to highlight the effect of the 2003 bushfires in Canberra (Ngambri), which is situated on Ngunnawal country and home to around 400,000 people.[31] This research has implications for how we could manage disasters in the future to recognise mental and emotional health in recovery plans. With climate change, these fires and floods will become more extreme and more frequent in the future, giving greater urgency to our historical research.

In January 2011, a flood inundated Brisbane, leaving over 14,000 buildings fully or partially underwater. As the water receded, people returned to their homes and businesses to find damaged structures, shattered windows and upturned furniture, all caked in vile-smelling mud. The government was focused on a clean-up, a quick recovery to restore a community to 'normal' or 'business as usual', a common response after disasters.[32] To leave a house in ruins is perceived as a 'failure of governance'.[33] On one weekend, more than 9,000 volunteers (labelled the 'Mud Army' by the media) poured into people's homes, keen to help with the clean-up. Furniture and possessions were tossed onto mounting rubbish piles on the footpaths, carpets were ripped up and walls stripped of damaged sheeting.[34] Some owners were left with empty, skeletal houses, any sense of a home gone. The media rhetoric was celebratory, the Mud Army heroes having rescued those in their hour of need.[35] The Mud Army members went home, threw their mud-soiled clothes into the bin and, while some told me of their survivor guilt,[36] most had a hot shower and a virtuous sleep and returned to their normal lives.

But many of those flooded felt violated. Strangers had entered their homes, stripped out their possessions and tossed out their lives. Homeowners spoke of having no time to sort prized items from those which were replaceable, and many things of value (monetary and sentimental) were lost to the dump.[37] Others expressed gratitude:

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30 Margaret Cook, *A River with a City Problem: A History of Brisbane Floods* (Brisbane: University of Queensland Press, 2019).

31 Scott McKinnon and Christine Eriksen, 'Engaging with the Home-in-Ruins: Memory, Temporality and the Unmaking of Home After Fire', *Social and Cultural Geography* 24, no. 2 (2023): 311–26, doi.org/10.1080/14649365.2021.1939127.

32 Steve Kroll Smith, *Recovering Inequality: Hurricane Katrina, the San Francisco Earthquake of 1906, and the Aftermath of Disaster* (Austin: University of Texas Press, 2018); Margaret Cook, '"Shaken But Not Stirred": The Aftermath of Urban Disasters', in *Disasters in Australia and New Zealand: Historical Approaches to Understanding Catastrophe*, ed. Scott McKinnon and Margaret Cook (Singapore: Palgrave Macmillan, 2020), 79–98.

33 Katarina Schlunke, 'Burnt Houses and the Haunted Home: Reconfiguring the Ruin in Australia', in *Housing and Home Unbound: Intersections in Economics, Environment and Politics in Australia*, ed. Nicole Cook, Aidan Davison and Louise Crabtree (London: Routledge, 2016), 222.

34 Cook, *A River with a City Problem,* 168–70.

35 For example, 'Resilience to Grow from Depths of this Great Flood', *Courier–Mail* (Brisbane), 12 January 2011, 26; Trent Dalton, 'Kindness Comes to Muddy Street', *Courier–Mail*, 15–16 January 2011, 6.

36 Interview with Stuart Pullar, 1 September 2019.

37 Interview with Natasha and Trevor Hale, 7 August 2019.

overwhelmed, not knowing where to start and unable to manage independently, they were grateful for help. The presence of the armed forces offered reassurance for some; they were not alone.[38] Some expressed disquiet at the rush and, already emotionally vulnerable, felt powerless to make decisions in the haste to clean up, or complained that they had not been asked. As one interviewee, Michelle Wright, said:

> It was overwhelming; we had just arrived at the house. If I was in that position, I would go to the homeowner and say we're here to help, let us know when to come back … They were so eager to help they weren't thinking about what people needed.[39]

Michelle needed time to look at things first and grieve alone. Instead, nameless helpers her family would never see again determined the fate of their property. She coped better when helped by family and friends, the process being more personal, and the ongoing relationship assisted recovery.[40] Michelle's experience is not uncommon; the additional anxiety caused by an undue haste to recover was identified in Emily O'Gorman's study of the 1990 Cunnamulla flood and Peter Read's study of Cyclone Tracey in 1974.[41] By contrast, another interviewee, Natasha Hale, self-described as 'extremely reserved', preferred strangers over friends, as anonymity left her privacy more intact. She 'loved' having the Mud Army in her home: 'it was a high and I was still in shock. Suddenly everyone disappeared and I started grieving.'[42] These examples highlight a need for time- and place-sensitive responses by authorities.

In January 2003, almost 500 homes in Canberra were destroyed by a bushfire, left as piles of rubble and ash. In their study of the aftermath, McKinnon and Eriksen also found the urgency to clean up and restore order retarded the grieving process. Authorities, concerned about safety and recovery, rushed in with bulldozers to clear burned houses, but homeowners needed to wander around the wreckage first to process the event, salvage what they could and start their emotional healing. An interviewee, Jayne Smith, likened the process to 'preparing someone for burial'.[43] Time spent in the ruins helped people come to terms with events as they 'unmade' their sense of a home. They had much to process and felt a complex array of emotions: a place that seemed safe and permanent only days earlier had gone, and the sudden loss carried an emotional toll.[44] A ruin reminds people of the fragility of buildings[45] and, most likely, of their own mortality and human frailty. There is a sense of loss or 'exile' from a loved place as the sense of geographical belonging has gone, and 'not', as the poet John

38 Interview with Amy Clarke, 3 September 2019.

39 Interview with Michelle Wright, 6 August 2019.

40 Ibid.

41 Emily O'Gorman, *Flood Country: An Environmental History of the Murray–Darling Basin* (Collingwood: CSIRO Publishing, 2012), 212; Peter Read, *Return to Nothing: The Meaning of Lost Places* (Melbourne: Cambridge University Press, 1996).

42 Interview with Natasha Hale, 7 August 2019.

43 Jane Smyth, cited in McKinnon and Eriksen, 'Engaging with the Home-in-Ruins', 1.

44 McKinnon and Eriksen, 'Engaging with the Home-in-Ruins', 5.

45 Schlunke, 'Burnt Houses and the Haunted Home', 220.

Clare writes, 'because you have left it, but because its nature has left you'.[46] People needed space, as McKinnon and Eriksen suggest, for 'slow and peaceful engagement with the ruins, free from onlookers before the clean-up crowds arrive'.[47] But this was not always possible.

Post-disaster responses were diverse. Some needed to talk, others wished for peace and silence. Many of those interviewed felt their emotional needs were curtailed in the societal pressure for recovery, which increased their anxiety and the emotional toll. They wanted solace and understanding from those in a similar plight, seeking emotional community.[48] Neighbours comforted each other, united by shared loss. A Brisbane interviewee, Amy Clarke, expressed a sense of solidarity among those flooded in 2011:

> In a way it felt easier when you were in the flood zone because you didn't need to explain. No one was pitying you … because it had happened to everyone … I didn't want pity, I wanted to be with my fellow flood people.[49]

Emotions could be raw, left unexplained or unspoken.

After both floods and fire, people spoke of divergent temporalities. At first inundated with help, many soon felt forgotten as the floods and fires receded into history for those not immediately affected. Interviewees expressed anger that those not flooded could move on with their lives while they were still dealing with the consequences months later. People who assisted long after the event were deeply appreciated; it helped those impacted 'get through'.[50] Some never recovered, experiencing mental health issues, marital breakdown, poverty or homelessness, to name a few of the eventualities shared with other disasters. A year after the Summer 2019–20 fires, some were still living in makeshift accommodation, while those flooded in northern New South Wales in February 2022 have been informed rebuilding will take 'years', a fate causing palpable emotional and mental stress.[51] People who have lived through floods speak of sleeplessness and panic in heavy rain; for those who experienced bushfires, hot dry summers increase fire anxiety years later. Embodied memories, like the smell of smoke, can revive fear and trauma. The experience is never forgotten; the

46 John Clare, 'The Ghosts of Natures Past' in Alan Bewell, *Natures in Translation: Romanticism and Colonial Natural History* (Baltimore, MD: Johns Hopkins University Press, 2017), 270.

47 McKinnon and Eriksen, 'Engaging with the Home-in-Ruins', 13.

48 Rosenwein, 'Worrying about Emotions in History', 842.

49 Interview with Amy Clarke, 3 September 2019.

50 Interview with Trevor Hale, 7 August 2019.

51 IDMC (Internal Displacement Monitoring Centre), 'The 2019–2020 Australian Bushfires: From Temporary Evacuation to Longer-Term Displacement', September 2020, www.internal-displacement.org/publications/the-2019-2020-australian-bushfires-from-temporary-evacuation-to-longer-term, accessed 5 June 2023; Mark Saunokonoko, 'Rebuilding Flood-Hit Lismore Will Take "Years"', *9 News*, 4 April 2022, www.9news.com.au/national/it-will-take-years-for-lismore-northern-nsw-to-recover-from-two-flood-blow/7c14440b-902d-4858-b93f-3465f05ed7df, accessed 5 June 2023.

eco-anxiety endures.[52] As Tom Griffiths notes, disasters 'have after-lives that can be as disturbing as the events themselves'.[53] Disasters become a temporal marker. People's lives are forced into a binary of 'before the fire' and 'after the fire', the moment when everything changed forever. By contrast, Aboriginal people with an understanding of the climate over deep time adapted and lived with floods and fire rather than feared them.[54] Disasters are part of nature's continuum.

This brief insight exposes some of the diverse emotions experienced by those affected by floods and bushfires. These complexities are overlooked in communal disaster recovery plans. While counsellors and social workers appreciate individual grief and trauma, governmental recovery teams are more likely to treat the community as a homogeneous group. They see the physical damage—the ruined homes—and instigate plans to clean it away and rebuild. Former homes bustle with clean-up crews and emergency response teams; speed is important. But the more intangible aspects of an individual's mental and emotional health can be overlooked—the rushed, impersonal recovery processes, for some, adding a second wave of trauma. Disaster responses should be reconsidered to make them more attentive to individual needs and emotional health, varied reactions and the longer time frames in which recovery takes place.

Floods and bushfires can dramatically alter the physicality of a place and potentially shatter imagined realities. As Read shows, 'place' is a social construct, created by an individual and shaped by societal forces of power and ideology that forms idealised notions of place and environmental security.[55] A locale is imbued with meaning, embedded with emotional and psychological values that relate to 'identity, belonging, security, self-esteem, self-efficiency and solace'.[56] In the contrived place of a suburban environment, humans' mental health and well-being are challenged by changes to their setting that, as Neville Ellis and Glenn Albrecht argue, potentially create feelings of grief, trauma, nostalgia and loss. As Albrecht writes, physical changes can 'undermine a personal and community sense of identity, belonging and control'.[57] As the scale and intensity of disasters increase with climate change, with shorter recovery intervals between them predicted, this sense of vulnerability and lack of control may escalate and fuel underlying eco-anxiety. As east coast Australia endured a year of successive

52 Scott McKinnon, 'Placing Memories of Unforgettable Fires: Official Commemoration and Community Recovery after the 2003 ACT Firestorm', in *Disasters in Australia and New Zealand*, ed. McKinnon and Cook, 66.

53 Tom Griffiths, 'Foreword', in *Disasters in Australia and New Zealand*, ed. McKinnon and Cook, vi.

54 Tom Griffiths, 'Travelling in Deep Time: La Longue Durée in Australian History', *Australian Humanities Review* 18 (June 2000); Nigel Clark, 'Aboriginal Cosmopolitanism', *International Journal of Urban and Regional Research* 32, no.3 (2008): 737–44; Victor Steffensen, *Fire Country: How Indigenous Fire Management Could Help Save Australia* (Melbourne: Hardie Grant Travel, 2020), 97–8.

55 Read, *Return to Nothing*, 2.

56 Neville R. Ellis and Glenn A. Albrecht, 'Climate Change Threats to Family Farmers' Sense of Place and Mental Wellbeing: A Case Study from the Western Australian Wheatbelt', *Social Science and Medicine* 175 (2017): 161.

57 Glenn Albrecht et al., 'Solastalgia: The Distress Caused by Environmental Change', *Australasian Psychiatry: Bulletin of the Royal Australian and New Zealand College of Psychiatrists* 15, s. 1 (2007): S95–6, doi.org/10.1080/10398560701701288; Albrecht, 'Solastalgia', 34–5.

floods in 2022, on the back of Covid-19 and bushfires, it became ever clearer that, as a society, we urgently need to come to terms with the temporalities of disaster and develop responses that do not leave those most physically affected emotionally overwhelmed too.

# Overheated

## Rebecca Jones

Settlers of remote, arid inland Australia in the interwar years experienced emotional problems which medical professionals attributed to the climate, weather and the physical environment. Everyday life for people living in places such as far western New South Wales and the Channel Country of south-western Queensland and northern South Australia was inextricably entwined with, and indeed defined by, heat, aridity, intense sunlight and remoteness. Temperatures were searingly hot for seven or eight months of the year, dust storms frequent and rain irregular. Sand, rock and salt dominated, vegetation was sparse and the human population even more scattered.

In the first half of the twentieth century, the Australian Inland Mission, later assisted by its offshoot the Flying Doctor Service, established nursing hospitals in remote communities such as Oodnadatta, Innamincka, Beltana and Birdsville, serving pastoral, mining and transport communities as well as travellers. The majority of patients who attended these clinics were settlers of British and European origins, as well as small numbers of people from China or northern India, from what is now Afghanistan and Pakistan but who were then known as 'Afghans'. Indigenous people made up about 20 per cent of patients.

The most common mental or emotional disorders diagnosed by nurses and doctors at these remote clinics were asthenia, debility, neurasthenia and other nervous disorders. These conditions were described as 'emotional instability' rather than insanity. They were characterised by an ill-defined mixture of temporary physical and emotional symptoms such as fatigue, malaise, anxiety, depression, weakness and inability to cope. The display of these emotions and the disorders with which they were associated was considered an indicator of maladaptation to climate, particularly heat, combined with associated water and food shortages which prevailed during the warmer months in inland Australia. These conditions accounted for 126 patients out of approximately 20,000 through the 1920s, 1930s and 1940s: rare but notable. Over three-quarters of these diagnoses were identified during periods of very hot or very dry weather. Men and women suffered these conditions in roughly equal numbers, but given the

predominance of men in remote areas in that period, women were overrepresented by about one-quarter. No Aboriginal people, 'Afghans' or Asian people received these diagnoses.[58]

The way affects and emotions are displayed, experienced and understood, as many historians have noted, is influenced by the social, cultural and temporal context of the period.[59] Similarly, diagnoses of emotional disorders are intertwined with the social and historical context, understandings of the body and differing vulnerabilities based on gender, race, class, occupation and remoteness. In order to understand conditions such as asthenia, debility and nervous disorders, and the way they were experienced, it is necessary to explore layers of meaning behind these diagnoses. By placing the identification and experience of emotional distress in the context of prevailing ideas of health, climate, race and gender we can better understand the emotions that the climate evoked. While I cannot unpack all of these layers in this essay, I will briefly describe two narratives of health common in the first half of the twentieth century which influenced the way people of British, Irish and other northern European origins understood and experienced hot climates, and their emotional responses to such climates.

The first climatically determinist narrative was a legacy both of nineteenth-century colonial theories of race and gender and ancient miasmic concepts of the permeability of bodies. It states that people who, ethnically, hailed from temperate climates (that is, Britain, Ireland and other parts of northern Europe) were innately vulnerable to intense heat and sun which penetrated white skin, sapped vigour and disturbed nerves, making people susceptible to mental and physical breakdown. Both sexes were thought to be vulnerable to the climate, although women were considered to be particularly susceptible.[60] Even as late as the 1940s, some nurses and doctors associated with the Australian Inland Mission and Flying Doctor Service argued that women could only cope with the inland climate for a maximum of two years. Nurses were appointed for two-year terms only, as some degeneration was expected; as the Revd William Gray of the Australian Inland Mission remarked, 'It is our experience that, after two years … the nurses need a period right away from it, to get themselves refreshed physically, mentally and spiritually.'[61]

58 Records of the Uniting Church in Australia Frontier Services, MS 5574. National Library of Australia, Canberra.

59 For example, among many others, Peter Stearns and Carol Stearns, 'Emotionology: Clarifying the History of Emotions and Emotional Standards', *American Historical Review* 90 (1985): 813–36; Thomas Dixon, 'Patients and Passions: Languages of Medicine and Emotion, 1789–1850', in *Medicine, Emotion and Disease, 1700–1950,* ed. Fay Bound Alberti (Basingstoke: Palgrave Macmillan, 2006), 22–52; Beattie, *Empire and Environmental Anxiety*.

60 For example, Ellsworth Huntington, *Civilization and Climate* (New Haven: Yale University Press, 1915); Charles E. Woodruff, *Expansion of Races* (London: Rebman, 1909), 277–8; and James Kilgour, *Effect of Climate of Australia upon the European Constitution, in Health and Disease* (Geelong: William Vale, 1855).

61 Notes by the Revd W. Gray, 6 August 1924. Records of the Uniting Church in Australia Frontier Services, MS 5574, Box 6, folder 8. National Library of Australia.

Understandings and expressions of emotion are dynamic, never monolithic, and a second narrative was influencing diagnoses of ill health and the experience of climate in the interwar years. In the decades after Federation in 1901, political imperatives to settle the continent, confidence in a new nation and the influences of biomedical concepts of health were jostling for space with earlier ideas of health, and were rationalising settlement of the Inland. Promoters of acclimatisation theories claimed that the hot, dry environment of arid Australia *encouraged* physical and emotional vigour; if settlers could cope with these challenging conditions, they became stronger. In Britain and its former colonies, industrialisation and increasing urbanisation brought anxiety about the degeneration of Europeans, particularly men who were believed to be becoming weaker and more effeminate.[62] By contrast, 'Inlanders' were praised, indeed, mythologised, as particularly capable, adaptable, enduring and uncomplaining people. Hot climates, it was argued, had created an improved, hardier version of the white settler.[63] While these differing ideas about climate, health, race and settlement were mostly used in discussions about tropical regions, in Australia, they were applied occasionally to hot arid areas.[64] This rationale was one of the motivations for the founding of the Australian Inland Mission by John Flynn in the early twentieth century.[65]

These narratives did not carry intellectual and political force only; they also influenced the diagnoses and treatment of patients by nurses and doctors working for the Australian Inland Mission and Flying Doctor Service. For example, the remedy for climate-related emotional complaints was to insulate patients from intense heat and sun. Australian Inland Mission nursing hospitals, considered outposts of modernity, science, domesticity and civilisation, were the first line of treatment, and sufferers were admitted as inpatients, often for two or three weeks. The climate was believed to play an important role in mediating and remedying ill health among settlers of former British colonies.[66] People diagnosed with serious or chronic asthenia and 'nerves' were totally removed from the environment and evacuated from the Inland, preferably to coastal areas where the weather was considered more tolerable for settlers.

These differing concepts of ill health also influenced the way settlers *experienced* weather and emotional distress, and the way patients with these diagnoses were viewed. Racially and climatically deterministic concepts of health considered settlers innately susceptible to the ill effects of climate due to their race and gender. Emotional

62 James Beattie, *Empire and Environmental Anxiety*, 69.

63 For example, J. H. C. Cumpston, *Tropical Australia: Report of the Discussion at the Australasian Medical Congress at Brisbane 27th August 1920* (Melbourne: Government Printer, 1921) and Randolph Bedford, *Explorations in Civilisation* (Sydney: S. Day, 1916), 9.

64 For a synthesis of these competing views as they applied to the tropics, see Warwick Anderson, *The Cultivation of Whiteness: Science, Health and Racial Destiny in Australia* (Melbourne: Melbourne University Press, 2002) and David Walker, 'The Curse of the Tropics', in *A Change in the Weather: Climate and Culture in Australia*, ed. Tim Sherratt, Tom Griffiths and Libby Robin (Canberra: National Museum of Australia Press, 2005), 92–101.

65 Brigid Hains, *The Ice and the Inland: Mawson, Flynn and the Myth of the Frontier* (Melbourne: Melbourne University Press, 2002), 77–8.

66 Discussed at length in James Beattie, *Empire and Environmental Anxiety*, 39–71.

and physical depletion in hot dry climates was therefore beyond the control of individuals and, to some extent, normalised. By contrast, allowing for individual agency in adapting and acclimatising to the environment implied that emotional instability was considered due to individual deficiency or failure. Emotional distress was pathologised and this resulted in pride and shared identity among those who thrived in extremes of climate and environment, but it left settlers who did not thrive vulnerable to judgement and shame. For example, Flynn is reported as having commented crossly: 'If the nurses cannot put in two years [in the Inland], they should stay at home in the first place.'[67]

Today, narratives of health, race, gender and climate differ from those prevalent during the first half of the twentieth century; however, emotional distress and mental illness are still associated with abnormal heatwaves.[68] Extreme heat challenges many people not only physically but also emotionally and mentally, provoking fear, anxiety and depression. Pathologising legitimate emotional responses to extreme heat (and other weather events) disregards the very real interaction of mind, body, social conditions and cultural narratives. As we learn to navigate increasingly extreme weather in Anthropocene Australia, this may assist us to appreciate the role that dynamic understandings of emotions and weather play in adapting—and not adapting—to a changing climate, and in providing sensitive interventions to assist those in distress.

# Scale

## James Dunk and Andrea Gaynor

The preceding essays use environmental history to explore anger, grief and overheating at a local, intimate scale, in the context of the planetary climate system. In this final section, we trace the emergence of planetary histories out of other forms of environmental history and examine the place of emotion within the context of a rising awareness of the planet, with its large-scale systems and vast geobiological history, and associated de-centring of the human.

The urgent need for histories of human vulnerability and ecological and Earth system changeability is well demonstrated by the marked global rise in ecological anxiety. Emerging out of Western youth culture, the concept is lodged uneasily between emotional, medical and political conceptual landscapes. In a recent global survey of 10,000 young people, a large majority reported significant emotional distress associated with environmental change, including fear, anger, despair, guilt, shame

67 Notes by the Revd W. Gray, 6 August 1924. Records of the Uniting Church in Australia Frontier Services, MS 5574, Box 6, folder 8. National Library of Australia.

68 Jingwen Liu et al., 'Is There an Association between Hot Weather and Poor Mental Health Outcomes? A Systematic Review and Meta-Analysis', *Environment International* 153 (2021): 1–18, doi.org/10.1016/j.envint.2021.106533.

and depression. Three-quarters felt that climate change made the future frightening; more than half that humanity was doomed. Almost 40 per cent were hesitant to have children themselves.[69] But mental health researchers have taken up the term, and advocacy organisations and service providers have begun developing resources to help clinicians, parents, educators and others respond to eco-anxiety. Adopting a medical model, eco-anxiety offers a frame for health professionals to support those affected by acute anxiety, particularly young people.[70] Others, however, are loath to pathologise what they see as a legitimate and understandable response to a distressing situation.[71]

The rapid rise of the field of planetary health in the last decade provides context for this spiking anxiety. Planetary health uses the concept of planetary boundaries to frame the human world: human societies are living within a set of boundaries which circumscribe a 'safe operating space for humanity'.[72] Crossing any of these boundaries could change important subsystems or induce feedback effects, 'often with deleterious or potentially even disastrous consequences for humans'.[73] Climate change is only the most overt and talked-about of the planetary boundaries identified by these researchers—who identify 1.5°C to 2°C of global heating as a key threshold—but biodiversity, ocean acidity, nitrogen and phosphate cycles are all in danger of overshoot. Planetary health carries the fundamental message that, as well as our industries, lifestyles, investment portfolios and ecosystems, disruptions in Earth systems are impacting our health. Ecological factors are already shifting the epidemiology of infectious and chronic illness, and our children and their children will bear in their very bodies the costs we have written off as 'externalities'. The health of plant, animal and other kinds of life and the integrity of Earth systems is intimately connected with our own health, physical and mental.[74]

Eco-anxiety is one manifestation of this spreading sensibility of connection and interdependence. It is a complex term, referring not only to anxious worry but also to a wide range of emotional states, including dread, paralysis, anger and grief. The latter, related to the wrecking of ecosystems and the extinction of species, points to relational

69 Caroline Hickman et al., 'Climate Anxiety in Children and Young People and Their Beliefs about Government Responses to Climate Change: A Global Survey', *Lancet Planetary Health* 5, no. 12 (1 December 2021): e863–73, doi.org/10.1016/S2542-5196(21)00278-3.

70 Ashlee Cunsolo et al., 'Ecological Grief and Anxiety: The Start of a Healthy Response to Climate Change?' *Lancet Planetary Health* 4, no. 7 (2020): e261–e62, doi.org/10.1016/S2542-5196(20)30144-3.

71 Panu Pihkala, 'Anxiety and the Ecological Crisis: An Analysis of Eco-Anxiety and Climate Anxiety', *Sustainability* 12, no. 19 (2020), article 7836: 12, doi.org/10.3390/su12197836; Cunsolo et al., 'Ecological Grief and Anxiety', e262.

72 Johan Rockström et al., 'Planetary Boundaries: Exploring the Safe Operating Space for Humanity', *Ecology and Society* 14, no. 2 (2009), article 32.

73 Johan Rockström et al., 'A Safe Operating Space for Humanity: Identifying and Quantifying Planetary Boundaries That Must Not be Transgressed Could Help Prevent Human Activities from Causing Unacceptable Environmental Change, Argue Johan Rockström and Colleagues', *Nature* 461 (2009), article 7263: 472.

74 Sarah Whitmee et al., 'Safeguarding Human Health in the Anthropocene Epoch: Report of the Rockefeller Foundation–*Lancet* Commission on Planetary Health', *The Lancet* 386, article 10007 (2015): 1973–2028, doi.org/10.1016/S0140-6736(15)60901-1.

connections between species.[75] Since the late twentieth century, ecopsychologists have even argued that the psychological distress elicited by the ecological crisis may be understood as the community of life asserting itself in the human psyche, or in another rendition, as *Gaia*, the biosphere embodied, achieving consciousness and becoming aware of itself.[76] To view eco-anxiety in this way, as an affective, emotional response to a planetary ecological crisis, rapidly spreading, leads to a set of fascinating and vital questions for historians. How does this growing ecological, planetary consciousness affect the sorts of arguments and narratives we piece together? How does it influence our historical reasoning? Here we outline the way in which parallel strands of the history of emotions, more-than-human approaches and environmental history have been twisting and meeting, in a broader reconfiguring that has been taking place among human ecologists, poets and novelists, environmental humanists, post-humanists and others.

## From environmental history to more-than-human histories

The earliest forms of environmental history were undoubtedly underpinned by emotions, but rarely gave sustained attention to historical analysis of past environment-related emotional states. Over the last half-century, warnings of the deterioration of human–environment relationships, and of the likely unhealthy, even cataclysmic, outcomes, have emerged from environmental science, international conferences, treaties and accords, mounting rapidly.[77] Across this time, many people have become conscious, and then increasingly concerned, with the crisis deepening and expanding from the 'human environment'—to use the frame developed for the 1972 Stockholm conference which precipitated the UN Environment Programme—to the planet and all its life. Among them have been historians, who developed a new sub-field that put human–environment relationships front and centre.

In developing the field of environmental history, scholars were rediscovering other species in a discipline long preoccupied with humanity. It was a revisionist project which saw everywhere histories that, by neglecting non-human lives and forces, had erased their roles in human history to produce ahistorical visions of a singular species striding across an impassive, waiting planet. And yet even in this new field, those humans tended to be the rational actors, or agents, of conventional history, even if the conservationists and environmentalists who loomed large in its pages felt strong attachments to other species and non-human communities.

75 Panu Pihkala, 'Toward a Taxonomy of Climate Emotions', *Frontiers in Climate* 3 (2022), article 738154, doi.org/10.3389/fclim.2021.738154; Ashlee Cunsolo and Karen E. Landman, eds, *Mourning Nature: Hope at the Heart of Ecological Loss and Grief* (Montreal: McGill–Queen's University Press, 2017); Cunsolo et al., 'Ecological Grief and Anxiety', e262.

76 Theodore Roszak, *The Voice of the Earth* (New York: Simon & Schuster, 1992).

77 Laurence Testot, *Cataclysms: An Environmental History of Humanity*, trans. Katharine Throssel (Chicago and London: University of Chicago Press, 2020).

The rise of eco-anxiety, however, underscores the need for historical narratives which foreground human vulnerability and the entangled subjectivity shared by humans and other species. Eco-anxiety is bound up in patterns of thinking and feeling emerging from the Anthropocene—the idea, formulated by Earth systems scientists at the turn of the millennium, that humans had amassed in modernity at once more power and agency and less control and wisdom than they had ever imagined. It was a realisation after the fact, an historical hypothesis, that humans—chiefly Western humans—had become, without noticing, a force of geological significance, threatening the very stability of Earth systems. The global adoption of planetary health is, in part, an admission of profound human vulnerability, a response to the self-destructive hubris entailed in the Anthropocene concept. Similarly reflecting on the Anthropocene idea, Bruno Latour describes it as a moment of realisation that all species are newly subject together to the planetary disruptions caused by (some) humans, acknowledging that the effects of this subjection are unequal both within and across species and societies.[78]

Scholarly responses to rising eco-anxiety similarly emphasise interdependency and relationships—a reckoning with past and present injustice and violence now rebounding on human health and peace.[79] In laying bare these connections, eco-anxiety aligns with the recent development of more-than-human histories that are situated, relational and reflexive. These are histories that de-centre the rational Enlightenment human subject and admit embodiment and emotion, as well as ethics and politics, into our history-making practices.[80] Its human actors are more frail and fallible than in most conventional environmental histories, and yet where earlier environmental histories tended towards declension in narratives of degradation and ruin, this new approach holds out hope for repairing relationships and building new ways of being with others in a damaged world.

## Histories of and for the planet

Ecological anxiety emerges from a rising awareness of the planet in crisis, and our own deep entanglement in its systems and struggles. It points to the need for a different historical approach, planetary history, which has roots in decades of growing planetary consciousness and knowledge. While the environment which emerged under threat in the twentieth century was partly local, requiring specific protection by local legislatures, it was also planetary. The biosphere as a whole, a band of life stretched around the planet, was being brought into view by new technologies for measuring

78 Bruno Latour, 'Agency at the Time of the Anthropocene', *New Literary History* 45, no. 1 (2014): 1–14.

79 Christina A. Popescu, 'Eco-anxiety and Solastalgia: Keeping Hope Alive', *Rhizome* 82, no. 1 (2022): 11–12; Leonard A. Steverson, 'Eco-Anxiety in a Risk Society: A Sociological Perspective', in *Eco-Anxiety and Pandemic Distress: Psychological Perspectives on Resilience and Interconnectedness*, ed. Douglas Vakoch and Sam Mickey (New York: Oxford Academic, 2023), doi.org/10.1093/oso/9780197622674.003.0008.

80 Emily O'Gorman and Andrea Gaynor, 'More-Than-Human Histories', *Environmental History* 25, no. 4 (2020): 719.

and modelling and the new, heart-rending perspectives afforded by space travel.[81] Facilitated by these images and technologies, and spurred too by a range of global governance endeavours, the finite and fragile planet was being pieced together, its soil, water and air already choked and poisoned by human activity. It was a sensibility inherited from the fear of nuclear annihilation, which waxed and waned with the temperature of the Cold War. In the late 1970s, however, atmospheric chemists discovered that human-made aerosols were depleting ozone in the stratosphere so that solar radiation was falling more harshly where the ozone layer was thinning, damaging the eyes, skin and immune systems of humans and other species.[82] The discovery of, and concerted global response to, ozone depletion in the stratosphere prepared the way for the much more fraught idea of anthropogenic global warming caused by the emission of greenhouse gases—already simmering in the background—to take hold among policymakers and a wider public.[83]

In this context, a few environmental historians took up the challenge of writing the history of and for the planet. In 1987, as attention to ozone depletion began to give way to the 'greenhouse effect' in governance frameworks, the US environmental historian Donald Worster called for historians to write planetary history, to study 'the history of all peoples colliding and cooperating with one another on a shrinking island in space'.[84] On a finite planet, new stories were needed to better situate human individuals and societies in Earth systems, and to better conserve planetary resources. After a slow start, the second decade of the twenty-first century saw a rapid increase in histories which more rigorously encompassed the planet, with historians galvanised, perhaps, by the ever more dire warnings of environmental scientists. There were new environmental histories taking a planetary, rather than a local or global, approach, including so-called 'big' histories which traversed deep time;[85] conceptual histories of the planetary environment;[86] and histories of the science and politics of anthropogenic global climate change, adding to older studies of the impacts of climatic change on human societies.[87] There were histories which grappled directly with the Anthropocene idea, some of which argued for significant revisions to the historical enterprise, which had been largely bound up with, even captured by, the institutions and intellectual

81 Ursula K. Heise, *Sense of Place and Sense of Planet: The Environmental Imagination of the Global* (New York: Oxford University Press, 2008), 17–67; Paul Warde, Libby Robin and Sverker Sörlin, *The Environment: A History of the Idea* (Baltimore: Johns Hopkins University Press, 2018), 15–22.

82 US National Research Council Panel on Atmospheric Chemistry, *Halocarbons: Effects on Stratospheric Ozone* (Washington, DC: National Academy of Sciences, 1976).

83 Jerome Whitington, 'Carbon', in *Anthropocene Unseen: A Lexicon*, ed. Cymene Howe and Anand Pandian (Santa Barbara: Punctum Books, 2020), 65–69, doi.org/10.2307/j.ctv11hptbw.11.

84 Donald Worster, 'The Vulnerable Earth: Toward a Planetary History', *Environmental Review* 11, no. 2 (1987): 90.

85 Testot, *Cataclysms: An Environmental History of Humanity*; David Christian, *Maps of Time: An Introduction to Big History* (Berkeley: University of California Press, 2004).

86 Perrin Selcer, *The Postwar Origins of the Global Environment: How the United Nations Built Spaceship Earth* (New York: Columbia University Press, 2018); Warde, Robin and Sörlin, *The Environment: A History of the Idea*.

87 Deborah R. Coen, *Climate in Motion: Science, Empire, and The Problem of Scale* (Chicago and London: University of Chicago Press, 2018); J. L. Brooke, *Climate Change and the Course of Global History: A Rough Journey* (Cambridge: Cambridge University Press, 2014).

structures of the Anthropocene.[88] Perhaps most promising have been the histories of planetary futures, prompted by Anthropocene anxieties.[89] The planet should loom in our histories, written in as the actor and subject it has been all along—or rather, perhaps, as a gargantuan network of actors in a noisy conversation, a thicket or warren or elaborate system of agency and subjectivity which defies metaphor. Where global, international and even national histories can sometimes be rarefied, dealing necessarily with political abstractions, the planet has a weight, literally a gravity and forceful presence, which increasingly demands attention.

New historical work is needed, however, which places humans more carefully among this harried, pressured, planetary weave of life. Earth's physicality draws planetary history into a small scale as well as an enormous one. Superimposed and entangled histories, foregrounding inter-relationship and interdependence, are required to narrate our vertiginous Anthropocene lives, lived in overlapping scales. Humans, in all our diversity, must figure as entangled, interdependent actors in these more-than-human, planetary histories. Building on the slow entry of the physical environment into human narratives in environmental history, and the more recent de-centring of the rational human subject in post-humanist approaches, contemporary histories are needed which attend to the vulnerability and bewilderment of Anthropocene human actors. The Anthropocene, indeed, furnishes us with a conceptual infrastructure for these histories. It speaks of enormous power and agency—a way of being and acting in the world which has grown to the measure of geological agency in the very crust of the planet—but also of recklessness, and the self-destructive notes of those very suggestions of power and agency. This dissonance—emerging in part from the blunt, homogenising language of 'the human' within the concept[90]—is one of the most prominent critiques of the Anthropocene idea, along with its continuance of the human exceptionalism that is the core driver of the chaos it heralds. New planetary histories might learn to navigate the planetary visions captured by the rival 'cenes—chthulucene, manthropocene, wasteocene, eremocene—and to respond to their fundamental questions about human selves, pasts and futures.[91]

88 Dipesh Chakrabarty, *The Climate of History in a Planetary Age* (Chicago: University of Chicago Press, 2021); Shen Hou, 'Wanted: A Planetary History for an Age of Crisis', *Environmental History* 23 (2018): 152–6.

89 Michael Rawson, *The Nature of Tomorrow: A History of the Environmental Future* (New Haven and London: Yale University Press, 2021); Daniel Rosenberg and Susan Harding, eds, *Histories of the Future* (Durham and London: Duke University Press, 2005); Christopher Schliephake and Evi Zemanek, eds, *Anticipatory Environmental (Hi) Stories from Antiquity to the Anthropocene* (Lanham: Rowman & Littlefield, 2023).

90 See, for example, Christophe Bonneuil and Jean-Baptiste Fressoz, *The Shock of the Anthropocene: The Earth, History, and Us* (London: Verso, 2017).

91 Haraway, 'Anthropocene, Capitalocene, Plantationocene, Chthulucene'; Martin Hultman and Paul Pulé, 'Ecological Masculinities: A Response to the Manthropocene Question?' in *Routledge International Handbook of Masculinity Studies*, ed. Lucas Gottzén, Ulf Mellström and Tamara Shefer (London: Routledge, 2020), 477–87, doi.org/10.4324/9781315165165-47; Armiero, 'The Case for the Wasteocene'; Edward O. Wilson, *Half-Earth: Our Planet's Fight for Life* (New York: W.W. Norton, 2016).

Under the weight of such considerations, how are we to write? There are critical problems of complexity and scale in writing planetary histories—similar problems to those that plague global and international historians. In the wake of the social and cultural turns, many of us are sceptical of historical reasoning on a grand scale. In addition, the problem of the time and funding required to research such histories, already an index of inequity, is deepened by our rising consciousness of the carbon budgets required to access sources and to visit the places encompassed by such projects.[92] The planet and its systems may seem to defy the capacity of our narrative genres and descriptive powers, as if truly planetary histories, and all forms of planetary story-telling, might be finally beyond our reach. Such concerns may have made historians reticent to take up the challenge of planetary thinking.

Faced with the deep temporality and impossible size of planetary themes, one response is to write more carefully and directly about how the Earth is bearing down upon the narrow horizons of historical human experience, and it is in this respect that the contributors of the three case studies in this forum excel. They focus on the particular, situated and local, affording historical renditions of what the poet Wendell Berry calls 'the language of familiarity, reverence, and affection' necessary for effective conservation. 'We need a particularizing language', writes Berry, 'for we love what we particularly know.'[93] The inverse is also true; having loved, defended and seen the objects of their love destroyed by fire, perhaps, or by flood or open-cut mining, even deep connections may twist, strain or snap. To see a place poisoned or ruined is to experience a loss that is not only particular and finite but also generalised. The idea of solastalgia (created, as Nancy Cushing notes, from and for the Hunter Valley) suggests that witnessing the wrecking of a place can mean losing something of the capacity for attachment to any place.[94] Such concepts may help us write about places already ruined when we encounter them, including the shadow places that have become 'sacrifice zones' for post-industrial consumer society.[95] Such places, too, demand our attention and sympathetic, relational story-telling. Community, attachment and love may be found even in capitalist ruins, as may the pieces of planetary histories.[96]

Such histories cannot be fully written without some recourse to the planetary. It is cumulative disruptions to the systems of the Earth that double back upon individuals and communities in floods and fires, rising oceans and temperatures as the planet is choked by greenhouse gases. Under the planetary conditions that have prevailed

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92 Carla Pascoe Leahy, Andrea Gaynor, Simon Sleight, Ruth Morgan and Yves Rees, 'Sustainable Academia: The Responsibilities of Academic Historians in a Climate-Impacted World', *Environment and History* 28, no. 4 (2022): 545–70.

93 Original emphasis. Wendell Berry, *Life is a Miracle: An Essay against Modern Superstition* (Berkeley: Counterpoint, 2000), 41.

94 Glenn Albrecht, '"Solastalgia": A New Concept in Health and Identity', *PAN: Philosophy, Activism, Nature* 3 (2005): 48–9.

95 Val Plumwood, 'Shadow Places and the Politics of Dwelling', *Australian Humanities Review* 44 (2008): 139–50.

96 Anna Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton: Princeton University Press, 2015).

now for some time, all of us, human and otherwise, may only be found and historicised within such conditions and disruptions. This means that while some places have been written off as sacrifice zones, all places and all bodies bear planetary scars, so that every modern environmental history might be approached as in some sense a history of sacrifice (an idea which prompts questions of the ritualistic form: by whom and for whom were these lives and futures sacrificed?)[97] Likewise, even the most local and specific studies in recent years are now also planetary studies, since anthropogenic disruption to Earth systems are having pronounced effects on ecosystems and human systems. In parts of New South Wales and Queensland in 2022, awareness of the impact of climate change on atmospheric systems and precipitation added significantly to the human trauma that rose again and again with the floodwaters which smashed alike through sandbag barricades and assumptions of security; the water signalled much larger and still more challenging realities. Though it was the Hunter Valley where Albrecht and others identified the risks to human mental health of living in sacrifice zones, Cushing shows how ecological grief may be displaced by anger, as individual jobs and futures are threatened by the distant rumblings and shifts in Earth systems. As Cook demonstrates, aggravated floods, fires and other effects of these shifts are so pronounced that they are being felt and interpreted at an experiential, conscious level by human and other actors, together with a growing awareness of the nature and implications of these underlying mechanics.

Historians through time have been primarily interested in the particular and detailed, the cut and thrust of human experience, rather than searching for universals or perfecting laws of behaviour—even when writing of humans searching for those universals in the physical sciences, art and philosophy. Environmental and more-than-human historians have filled historical narratives with non-human life and agency; one response to our dilemma of reconciling the planetary with the local and emotional is to write more-than-human histories which are specific, relational and—foregrounding both our own ethics and interests, and the lenses through which the objects of our histories become known or obscured—incorporate a planetary frame within the suite of entanglements we choose to portray. New planetary histories will therefore be at once local, intimate, particular and ethical, crossing species boundaries to encompass biological and ecological reality and interested in the way shifts in Earth systems are shaping human experience. They will attend to embodiment and emotion, and may account for and describe the grief, despair and anxiety many feel as they become aware of scientific predictions of the unjust ends of the violent (extractive, colonial) games some humans have been playing. These are new narratives of human hubris and vulnerability, of interdependence and symbiosis, where the small scale of individual, family, communal and ecosystem life is played out always in the foreground of the planetary.

97 Hugo Reinert, 'Sacrifice', *Environmental Humanities* 7, no. 1 (2016): 255–8, doi.org/10.1215/22011919-3616461.

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