

ARTICLE

Eco-anxiety and a Desire for Hope: A Composite Article on the Impacts of Climate Change in Environmental Education

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Abstract

Responding to increasing concerns regarding human-induced climate change and shared commitment as environmental educators to support climate action, we crafted this article as a composite piece — an emerging method of inquiry. We are eleven contributors: the Editorial Executive of the Australian Journal of Environmental Education and two colleagues who each respond to prompts concerning our experience of climate change and our practices of climate change education. The responses provide insights regarding how we strive to enact meaningful climate action, education, advocacy and agency. This article presents the reader with various ways environmental educators work through eco-anxiety and engage in active hope when supporting climate change education/agency/action. The following insights emerged, illustrating 1. the significance of embracing diverse perspectives and knowledge systems; 2. Emotions as catalysts for action and activism; 3. the value of fostering collaborative spaces/relationships/communities that empower people; 4. the importance of integrating ethical responses and critical climate literacy in climate change education/research; 5. learning from places and multi-species entanglements; 6. acknowledging tensions. We offer these six insights not as a solution but as a potentially generative heuristic for navigating the complexity and uncertainty of climate change education in contemporary times.

Keywords: Active hope; climate change education; eco-anxiety; eco-emotions; solastalgia; composite articles; place-based education

Introduction

In this article, the Editorial Executive of the Australian Journal of Environmental Education (AJEE) and colleagues Robyn Fox and Dave Hills respond to our collective concerns regarding human-induced climate change.¹ We are pressingly aware that Earth systems are shifting in

¹Throughout this article, when we mention climate change, we are always referring to human-induced climate change, recognising that our current socio-ecological predicament is one shaped by multifarious anthropogenic influences. Furthermore, we recognise that climate change is one complex entangled aspect of contemporary life, connected to others factors such a species extinction, biodiversity loss, social injustice and much more. Climate change is the central focus in this paper.

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response to human actions, highlighting complex challenges to humanity and the more-than-human world (IPCC,² 2023). For example, the World Meteorological Organisation declared 2023 as the hottest year on record (UN News, 2024). Such evidence demonstrates that humanity's efforts to address climate change are too slow (IPCC, 2023). Furthermore, issues of climate justice are becoming more apparent through examples of inequitable impacts on marginalised populations and those most vulnerable (Ngcamu, 2023). Our current predicament is undeniably an urgent call to action. Hence, this composite article — a collaborative effort as a community — presents our shared commitment as environmental educators/researchers to support and lead climate action, education and agency.³

Human-induced climate change is not a new topic of focus globally or within the Australian Association for Environmental Education (AAEE) and its affiliated journal, AJEE. However, a paradigm shift is occurring; broader public opinion, sentiment and political spheres are evolving, with people realising and acknowledging that human-induced climate change is a significant threat to socio-ecological health on a planetary scale. Extreme weather events such as the 2019/20 Australian mega-fires, are vividly remembered and firmly etched in peoples' minds (Biddle *et al.*, 2020) as incontrovertible climate impacts. To have their voices heard, increasing numbers of young people are resorting to activism, as witnessed through the School Strike for Climate (SS4C), see AJEE Special Issue Volume 38 – Issue 1 (Verlie & Flynn, 2022). As White *et al.* (2024) explain, planetary and human health are entangled — environmental problems are socio-ecological — and education has an important role to play in developing agency and hope.

The above examples (along with countless more we could offer) reflect the gravity of contemporary times; however, the “future depends on far more determined and deliberate climate action than we have seen to date” (Bradshaw *et al.* 2023, p. 50). Human-induced climate change continues to gather pace, with many irreversible planetary tipping points being reached and exceeded (Bradshaw *et al.*, 2023; Wunderling *et al.*, 2024). Furthermore, concern for Indigenous knowledge still sits on the periphery of climate change solutions (Bawaka Country *et al.* 2023; Datta, 2024; Godden *et al.*, 2021; Jukes & Riley, 2024; Poelina *et al.*, 2023a, 2023b). Moreover, feelings of solastalgia, the “pain or distress caused by the lived experience of the ongoing loss of solace and the sense of desolation connected to the present state of one's home and territory” (Albrecht, 2020, p. 12) or eco-emotions, continue to rise — at least amongst us authors. As Pihkala (2022) asserts, there are many complex emotions that shape how people react to the climate crisis and this is an area warranting more attention.

These concerns and actions demonstrate that we are in a time of transformation regarding climate change education, advocacy and agency. As Fettes and Blenkinsop (2023) argue, education should be a practice of eco-social-cultural change. As environmental educators, we are part of this transformative change process, actively collaborating as society develops the “social and ecological systems to create a more just and resilient future” (White *et al.*, 2023, p. 3). But what might such a meaningful change look like? How do we grapple with our own eco-emotions and climate grief whilst pushing for climate action? This has led Scott, Robyn and Dave to devise the prompts in the following section, which guide the responses of our AJEE Editorial Executive colleagues.

The composite approach and an outline of the responses

This composite article builds upon the framework Quay *et al.* (2020) and North *et al.* (2024) used, in which positional statements from members of specific editorial boards/executives were gathered

²Within our work, we reference the Intergovernmental Panel on Climate Change (IPCC). We listen and seek guidance from this organisation as they are the leading International United Nations peak body that provides comprehensive reports based on scientific evidence.

³Within our work we see an overlap with education, action and agency. Which is to say, our efforts as educators/researchers aim to foster agency (capacities to act) within ourselves, those we work with and the broader community.

regarding pressing issues. The composite approach intends to provide a “snapshot” of information from a diverse range of experts in a particular field. Similarly, this article invited the Editorial Executive from AJEE to respond to the following prompts regarding climate change education:

1. How do we manage the overlapping eco-anxiety, solastalgia and concern for the planet with hope, desire and drive to enact meaningful change and climate action?
2. How can we work through our personal challenges to support and lead climate action?
3. What research published in AJEE is of significance for you in managing the challenges of climate change and climate change education?

Below are the responses to these prompts from each of the contributing authors. These responses are presented in alphabetic order of the author’s surname. The final section of the paper offers summative thoughts regarding the trajectory of the field based on insights drawn from the AJEE Editorial Executives.

Embracing the post-human⁴ in/as film

By Joseph Paul Ferguson

I have to apologise. I was born with a disfigurement where my head is made of the same material as the sun. – Thief in *Upstream Colour* (Carruth, 2013)

I have embedded film as a stimulus for reflection and action in an environmental education unit that I run within a Master of Teaching (Secondary) course. Many of the students, all of whom are learning to become secondary and/or primary teachers, start this unit with the perception that environmental education and, more specifically, climate change education is all about environmental and climate science. As such, while they have an appreciation for the importance of this science — which is, of course, necessary for rich and impactful climate change education — they tend to be unaware of the anthropocentric⁵ nature of such a perspective. As someone who is responsible for supporting the induction of these soon-to-be teachers into the climate change education community, I consider it my duty to provide them with opportunities to challenge this anthropocentrism through a process of realising that “we are part of that climate we seek to understand” (Verlie, 2017, p. 562). So, I am increasingly turning to film to provide these cognitive and affective opportunities for students. I consider the “magic of cinema” as a possible means by which students might start to radically alter their worldview by becoming aware of and connecting with their more-than-human kin.

As an example, I present Shane Carruth’s *Upstream Colour* from 2013 (Figure 1). This is a film that decentres the human characters in terms of narrative and audio/visual focus, instead prioritising the storying of the life cycle of a parasite that involves humans, pigs and orchids as its host. As this life cycle plays out in cinematic form, the memories and identities of the two main human characters not only merge with each other but also with the other hosts; the boundaries between species are slowly eroded. I believe it is one of the few films that is truly post-humanist, which is reflected in the fact that many people complain that it does not make sense, most likely because they cannot overcome their anthropocentric tendencies.

I find it interesting to ask students what they think and feel about this film in relation to negotiating the challenges of the Anthropocene.⁶ My hope is that films such as *Upstream Colour* can function as part of the “material-discursive apparatuses” of our teaching, through which “the

⁴The “post-human” and posthumanism, broadly speaking, refers to multiple conceptual moves which consider life beyond the species human as well as life beyond the normative image of what it means to be human (Braidotti, 2013).

⁵The terms anthropocentric and anthropocentrism are utilised throughout this article, referring to human centeredness – a worldview where humans are situated as centrally important and hierarchically superior to others.

⁶The Anthropocene is a suggested title for our current epoch, where humans/man (*anthropos*) have become a geological force impacting all life on the planet.



Figure 1. The parasite, pig, orchid and human that form a pan-species entity in *Upstream Colour* (Carruth, 2013), a post-humanist film which challenges the anthropocentrism that underpins the Anthropocene. These images from the film are used for criticism and review under fair dealing.

climate and the human are contingently, agentially coconstituted” (Verlie, 2017, p. 560). I posit that we can be with “eco-emotions” (Pihkala, 2022) in transformative ways through/as film. I believe that immersing ourselves (that is, teachers and students) in this way with film and with other post-humanist texts such as those published in *AJEE* (see, for example, Davies, 2024; Bawaka Country et al., 2023), can enable us to enact environmental education in ways that make possible more desirable futures.

Connecting to country and community to enact climate action

By Robyn Fox

I consider myself privileged to have spent so much time outdoors with students over my career as an outdoor environmental educator. I have recently returned from field trips with students on K'gari,⁷ the largest sand island in the world. K'gari, in the Butchulla language, means paradise, and it does not take long to understand why. K'gari holds World Heritage status due to its extensive dune systems, the largest number of perched lakes in the world and diverse ecosystems, home to free-roaming Wongari (dingoes). "*Minyang galangoor gu, djaa kalim baya-m-* what is good for the land comes first" (Gould et al., 2024, p. 1). This is the first of the three Lores of the Butchulla People, the traditional custodians of K'gari.

Anthropogenic climate change is impacting K'gari (Walker et al., 2022). It affects the "Butchulla traditional knowledge and the stories tied to these values" (Boulter et al., 2024, p. 8). As climate change degrades the Country, its ecosystems, and its habitats, it also places the Butchulla People's cultural practices, totems, Songlines and lores in a fragile and precarious situation.

As an outdoor environmental educator, I deliberate with colleagues (such as co-authors Scott and Dave) concerning how we prepare students to be educated about the impacts of climate change and how we develop a "climate change curriculum in OEE" (Fox & Thomas, 2023, p. 183). In what ways are we supporting students who come to our programmes with feelings of solastalgia and providing them with the support they need to live and flourish in a climate-changing world? How are we educating students with an understanding of the natural and more-than-human worlds, challenging the Westernised neoliberal societal norms, which have distanced us from nature and accelerated the climate change effects on K'gari and beyond?

I use intentionality in my pedagogical choices (Thomas, 2021) and facilitation strategies to foster positive student connections to Country, environment and community. My intention is to uphold the Butchella People's first Lore. This intent is bounded within the concepts of place-responsive (Siegel, 2024; Sutton et al., 2023), more-than-human (Jukes, 2023a, 2023b), holistic (Tsevereni, 2021), experiential (Humphreys & Blenkinsop, 2018) and hope-based pedagogies (Finnegan & d'Abreu, 2024; Macy & Johnstone, 2012).

The enduring learning that takes place on the field trip to K'gari varies for participants. For some, it is time spent with the Butchulla People. Participants' cultural humility (Palmer, 2024) is deepened as we learn about and engage in their sacred places, lores, culture, bush tucker, Songlines, dreaming stories and struggles with climate change. For others, it is the field naturalist journals they keep. These provide an opportunity to slow down and pay attention to an aspect of Country that intrigues them. Field naturalist journaling allows participants to explore the environment they encounter and record moments of awe, wonder and truth-telling through various mediums. They also function as a record of a landscape over time, which they can later draw conclusions from about changing climatic conditions. Others enjoy moments of *dadirri* (deep listening) (Miriam-Rose Ungunmerr-Baumann, 1988). Through intentional deep listening, students connect to the Country and its stories as they allow their minds to "shimmer" as they move between the past, future and back again (Malone et al., 2020). For others, it is the awe and wonder caught in a moment. The sunrise over the beach, the shooting star, the moment they can identify a plant they sketched in the field in a guidebook, swimming in a perched lake, standing on top of a sand blow, collecting rubbish on the beach, the gratitude of a home-cooked meal or seeing a wongari for the first time. My enduring learnings include the profound impacts that intentionally planned Outdoor Environmental Education (OEE) experiences can have on participants and the importance of spending time on Country in connecting and empowering a community of people to enact climate change education and advocacy.

⁷K'gari, formally known as Fraser Island, was officially renamed in 2023 to honour its traditional name given by the Butchulla People, the Traditional Owners. This name change recognises and respects the island's Indigenous heritage and cultural significance.

To cope, I surround and involve myself with communities that advocate and champion active hope in the space of climate change adversity. These communities connect people deeply to place and advocate for climate education and action. These include the AAEE, Climate Change Education Network and the Australian Nature Journaling Association.

The “blue marble” and approaches to climate change education

By David Hills

It has been over 50 years since the “Blue Marble” photograph⁸ of the earth was taken, and its significant effect on the Euro-Western approach to conservation and climate change education (Ganesh *et al.*, 2022) has not been lost on me. This has prompted me to think, *what* is the blue marble event of *our* time?

Emerging from my developing eco-anxiety in recent years, I feel that we need another significant shift, trigger or modern “Blue Marble” to stimulate a new wave of climate change action. For some, *true conservation* has been coined by the notion that someone realising that they have not inherited the earth from their ancestors but borrowed from their children (Grey, 2016). Whilst this notion is a cliché, it still effectively characterises an approach or attitude to climate change instead of a discrete behaviour (Arndt *et al.*, 2023). I feel such sentiment is required to keep this at the forefront of environmental educator minds, and a modern Blue Marble may achieve this.

Reflecting on my practice as an OEE lecturer, my most significant realisation was that climate change education in the outdoors is not a session, subject or part of the journey. It is not a box to tick, a bullet point in a list or a module that needs to be covered. Climate change education should be layered into all parts of our curriculum and pedagogy and ultimately become omnipresent (Vandenplas *et al.*, 2023). We are privileged to have the opportunity to have a significant impact through effective OEE of future teachers that disseminates through generations so that attitudes to conservation, like hygiene, health and diet, are embedded from an early age (Grey, 2016). Some may view this as idealistic and unrealistic; however, we must intentionally effect change. Perhaps the modern-day Blue Marble event is not a single photograph or moment but a new way of thinking where the teachers we train do not pick up their blue marbles and put them on but carry them with them all the time.

Responding to situated worlds

By Scott Jukes

Bushfires are not new, but the prevalence of them is increasing. Climate change is influencing fire regimes, and it is having a material impact on the mountain forests of Victoria (Zylstra, 2013). It is hard for me to grapple with. Especially now, contemplating a fire at Mount Cole in Victoria, Australia.⁹ The smoke has not yet settled from the smouldering gums near Mount Cole, but the impact reverberates as I type these words.

Climate change events and the weight of socio-ecological issues are increasingly inhabiting my consciousness. In my early days as an outdoor educator, I was preoccupied with the notion of adventure and exciting experiences in far off places. But over the years my focus has altered. The ventures outdoors have been less about me, less about the adventure. I’ve shifted my attention to

⁸Taken from the final Apollo mission in 1972, the photograph gave us an external viewpoint of the earth for the first time, and the “Blue Marble Effect” reveals both the earth’s immense beauty and its extreme fragility simultaneously (Nardo, 2014). It prompted a distinctive shift to a new approach to education and caring for our planet that inspired genuinely global approaches to conservation, characterised by globalisation and visibility (Ganesh *et al.*, 2022).

⁹The Bayindeen Rocky Road bushfire burnt Mount Cole and surrounding areas in late February, 2024. This fire impacted farmland, residential areas and state forest, including a remnant patch of snow gums on Mount Cole.

the places I work/inhabit and the material relations which constitute them (e.g., Jukes et al., 2019, 2022; Riley et al., 2024). Such a shift in focus has compelled me to consider ecological precarity, and what I might do to work towards liveable futures (e.g., see Jukes, 2023a). But there isn't a simple solution; my research thus far hasn't exactly fixed anything . . . not that I expected it would. As Verlie and Flynn (2022) state, "none of us can . . . 'stop', 'fix' or 'control' the climate crisis" (p. 8). Moreso, my research has helped me learn to grapple with these climate change events we are facing. Bright and Eames (2022) argue we should not shy away from the discomfort of climate change, as emotions like anger and anxiety can be motivators for action and play a part in the journey towards cultural change. The recent fire at Mount Cole offers me another emotive reminder that we are "in and of the collapsing climate" (Verlie & Flynn, 2022, p. 7), and the task of responding to socio-ecological issues is ongoing.

Each year, first-year Outdoor Education students that I teach head to Mount Cole, learning to be comfortable in the bush and start to form a community of learners. They did not go there this year, as the mountain was charred black and the risk of falling limbs too high. But despite the eco-anxiety such events induce, I am learning to use this as motivation for action. This is another chance to show, share and feel the impacts of the precarious planetary position and the real effects of things like climate change in/on the places we inhabit, work and live. This is how I live with solastalgia.

Similar to Robyn's practices described above, students and I go to places like Mount Cole, create memories and develop a relationship with the Australian bush. But as these places become increasingly damaged by the impacts of a changing climate, these events act as catalysts for conversations. Yes, it matters what you buy; each tap of the debit card is a vote for that product in the capitalist competition. Yes, it matters who we vote for, collective voice and action can speak truth to power. Yes, it matters how we shape the world; we influence it, shift it, as it also does to us, with every breath and act, with every thought and word. I do not intend to conflate modernity's capacities for creating change, but it is important to think about how we want to live. As Verlie and Flynn (2022) propose, we need to learn to navigate uncertainty and attend to ethical complexity. We need to learn different ways of confronting the challenges of contemporary times and I see collaboration as part of the process.

Maybe this is just an attempt at empowerment, but nonetheless, this is how I continue to live and work in the face of changing landscapes, climates and worlds. If the places I take students and the experiences we share can induce emotions and light a spark of passion, that is an act towards a future that cares. Simply, it is about little shifts in attention; subtle reconsiderations of each person's place in the universe. As I have mentioned elsewhere, a valuable strategy in response to climate change, and the eco-anxiety that may generate, "involves working in solidarity with others that also care, learning from them, and fuelling each other's hopes and passion towards collaborative action" (Jukes & Riley, 2024, p. 115). For me, this is something worth continuing with. It is not a universal fix, but a small act of relationship building and collaboration where we may foster specific yet unique capacities to act within situated worlds.

Significance of teacher agency in climate change education

By Amrita Kamath

As a researcher, a science educator, and a mother of two young boys, I often feel concerned about the anxiety, hopelessness, sadness, anger, frustration or a general sense of overwhelm that our young people (and we ourselves!) can experience when engaging with ecological crises (Verlie et al., 2021). However, I also realise that we collectively have the opportunity (and the responsibility) to empower them with the knowledge and skills needed to navigate the challenges without perpetuating a "doom and gloom" scenario.

Looking at the challenge from an educators' lens, a teacher's agency in shaping and framing students' experiences in climate change education is particularly significant, as it needs to be implemented in ways that are not abstract and distant (Lenzen *et al.*, 2002). This agency can be achieved through conscious choices that are informed by actionable possibilities (Deed *et al.*, 2014), and is an amalgam of iterational, projective and practical-evaluative dimensions (Emirbayer & Mische, 1998; Tytler *et al.*, *in press*). For effective agentic decisions and practices, all three dimensions need to be synchronous. To elaborate what this means in terms of climate change education, it becomes pertinent to exemplify these deeply interwoven dimensions as individual constructs. The iterational dimension is informed by a teacher's personal, professional and educational experiences with regards to climate change, and the projective dimension encapsulates short & long action orientation of the teacher, which includes aspirations with respect to their work (Priestley *et al.*, 2015). The practical-evaluative dimension entails judgements made by teachers that are context-based; a supportive school culture can facilitate implementation of climate change education through strategies that are practical and productive.

Overall, for climate change education to be sustainable and purposeful, it's crucial that teachers are invested in understanding and responding to the call for action, and are supported by their broader contexts in ways that strengthen student awareness and competence in comprehending and relating to climate change in a meaningful manner.

Fire and floodwaters: Environmental education in a confusing world

By Marianne Logan

It is easy to feel a sense of hopelessness and despair at the unfolding crises emerging in my own world due to the impact of human-induced climate change. In 2019, I witnessed the local rainforest in Northern New South Wales, my home within the Bundjalung Nation, stressed by drought. Plants withering and shrivelling, leaves falling from the trees and crunching under my feet in contrast to the healthy damp, rotting, forest floor environment, characteristic of this ancient rainforest (Figure 2). The extreme heat and dry conditions at that time resulted in bushfires which burnt 46% of the Gondwana Rainforest World Heritage Area in Northern NSW (DCCEEW, 2022), furthermore 6.7% of the state of NSW was burnt in 2019/2020 (NSW Government, 2024). In 2022, the region experienced destructive floods where flood waters reached heights that were higher than ever recorded (Lismore City Council, 2022) which was devastating for local communities.

Widespread impacts of climate change are being experienced across the world where extreme weather patterns such as those we experienced in Australia are upsetting the balance of fragile ecological systems and are leading to wide loss of biodiversity (IPCC, 2023). It is important for young people to understand the interconnection of all things and the consequences of human activity because of this interconnection.

The education system in Australia tends to promote human exceptionalism and the Earth as being a resource for the benefit of humans (Logan, 2023) in contrast to a relational view where all beings are interconnected and have a right to exist regardless of the benefits to humans. The impacts of climate change due to human activity are recognised as injustices to all beings, humans included. These injustices evoke strong reactions in young people, including anger, fear and eco-anxiety, as climate change impacts the future of the planet (Bright & Eames, 2022; Verlie & Flynn, 2022). Human centred education systems that are disconnected from the Earth, and Government inaction (or slow action) towards climate change are frustrating for some young people illustrated by the school strikes for climate change (Fridays for Future) across the world where young people express their anger and frustration by walking out of school and marching with placards (Verlie & Flynn, 2022). Research has shown that taking part in school strikes or other climate protests, carrying out activities in local areas (such as recycling, promoting clean energy, growing food,



Figure 2. Aptly named flame tree flowers (*Brachychiton acerifolius*) on the fallen parched leaves building up on the rainforest floor. Photograph by Marianne Logan.

starting environmental clubs, creating green spaces and so on) provides young people with comfort as a result of taking action towards the effects of climate change (Khatun & Logan, 2023) despite these everyday activities sometimes being seen as “ineffectual” when considering the immensity of climate change impact (Trott, 2021, p. 300).

As environmental educators and communicators it is essential that we promote research driven, effective, environmental change, at a time when there are intensifying dire predictions and overwhelming impacts of climate change combined with political, social and economic unrest in a greed driven society. Indigenous philosophies that encourage the “vibrant relationships of our Earth community” (Williams, 2023, p.326) should be incorporated more effectively into education systems and society in general to reconnect people and place. Continuing to facilitate or encourage research designed and conducted by children and young people surrounding climate change is imperative as it enables young people a genuine voice and agency to explore aspects relating to climate change including their wellbeing in this rapidly changing and confusing world.

Attending to the relational tissue

By Kathryn Riley

It is the middle of January in the Canadian prairies. Usually this time of year, we live with a blanket of deep snow, crisp sunny days with blue sky that will stretch on forever, and frigid temperatures that can plummet to -45 degrees Celsius with wind chill. Today, as I make my way to meet colleagues about an upcoming writing project, it is 8 degrees Celsius. Now, by all accounts North America is experiencing the effects of El Niño, and for a moment I am placated. I make it to the coffee shop, clad in my winter coat, boots, gloves, beanie and tear it all off the minute I am inside. I couldn't trust my phone weather app telling me it was 8 degrees. Surely not. But it was true. I did not need to be dressed, like I usually would, for what often seemed like an Arctic

expedition in the middle of a prairie winter. Thus, the small seed of anxiety that has taken permanent residency in the pit of my stomach persists.

I sat down with my colleagues, both climate change educators in post-secondary and elementary education contexts in Winnipeg. We talked about the weather, and all the great initiatives happening in the city to draw teachers and learners into the importance of studying and understanding this important interdisciplinary topic of inquiry. Movements were assembling. Then, as my head started to spin at full throttle with accelerating chaotic chatter of dates, initiatives, names, titles, activities, events, locations, projects, grants, webinars, professional development and so on, the fourth member at our table that day, our Anishinaabe friend, gently took his seat. All at once, the energy at our table, and even throughout this snug, urban café, shifted. Conversation moved from a scrambling mess of uneven and untied, disconnected threads to a meeting of eyes, hearts and souls, and spirits through conversation that was organised, soft, sacred and ceremonious. My heart rate began to slow, my breath smooth, and my jaw unclenched. I was glad our friend was here.

As we drank coffee together that afternoon, we asked our Anishinaabe friend what climate action meant to him. He asked us to go first, and we gave gold star accounts of our attempts to connect children with land through outdoor learning pursuits, teach about carbon emissions, organise groups to lobby against inadequate climate policies, and instil hope in young people through school projects like gardening and responsible garbage collection. Our Anishinaabe friend agreed that these activist projects were all very important. Then, he settled in to tell us a story. I cannot go into this story here for ethical reasons, but I will say that this story reached me in ways that made me question everything I know about grappling with eco-anxiety and responding well to these socially and ecologically precarious times. Action alone is not enough, as it is not about *what* is action, but more about *what action does in relation to the context it is dwelling with* (Ahmed, 2023). In creating the world we want, rather than replicating the world we have, action for me is tending well to immediate kin relations upon the Land, Country, and Places that I dwell; tending well to family, ideologies, thoughts, feelings and behaviours to walk a good path upon this Earth. Not as a self-centred, autonomous, and discrete, neoliberal individual; but in understanding that every encounter leaves us hyphenated (Akómoláfé, 2023), as a centred self that is composed of relational response-ability, accountability and obligation.

For me, climate action as a grassroots educational movement ensues the act of pausing, attuning and noticing; enacting rigorous and meaningful intentionality in refusing and undoing neoliberalism and colonisation through slow scholarship (Bozalek, 2024), or slow pedagogy (Payne & Wattchow, 2009) that attends to the relational tissue and the skin as porously open to all earthly connections, stories and ideas (e.g., Poelina *et al.*, 2023c). As landscapes flicker with hauntings of past and present injustices and violences (Tsing *et al.*, 2017), pausing, attuning and noticing long enough means to listen to what the land might teach us about hope and action for more sustainable and relational futures.

Perplexities of “becoming of place” in the climate-responsive city

By David Rousell

How does a city learn to transform itself in response to climate change? This question has perplexed me since moving to the inner north of Naarm (Melbourne) five years ago and encountering the ever-changing sense of plurality and transformation that permeates this place. Central to this perplexity is the more foundational question of how to live responsibly on the sovereign and unceded lands of the Wurundjeri Woi Wurrung people, whose cultural custodianship has endured for tens of thousands of years despite two centuries of colonial dispossession. To the extent that this city is founded on the settler colonial lie of white possession and ownership (Moreton-Robinson, 2015), and has since become one of the most superdiverse urban populations in the world (Rigney, 2023), my arrival and resettlement as a migrant of mixed

European ancestry reinforces multiple histories of displacement (Saunders, 2021). What right do I have to make home in this city? And what is my role and responsibility as the city learns to recompose itself in response to the planetary crisis of climate change? Recent work in the Australian Journal of Environmental Education (AJEE) has helped me think and work through these perplexities while opening new questions at the intersect of Indigenous and diasporic studies (Poelina et al, 2022; Thornton et al, 2019; Williams, 2023). In her recent article *From Indigenous philosophy in environmental education to Indigenous planetary futures*, Lewis Williams (2023) discusses her migration from ancestral Māori homelands of Tauranga Moana, Aotearoa to Dshkan Ziibi territory on Turtle Island (Canada). She articulates the complexities of navigating her own “dual epistemological and cultural lineage (Indigenous and no-longer Indigenous to place)” through an investment in “processes of ‘becoming of place’ and the relational space, practices and theoretical traditions that might enable this” (p. 322). As a person whose ancestry is marked by migrant and diasporic movements across continents and territories, my own genealogical history has been no-longer Indigenous to place for as far back as it can be traced. While my immediate family’s recent migrations have been elective, I often work with children and young people whose families have been forced to migrate from war-torn and climate-affected places. The concept of “becoming of place” gives me hope that wounds of displacement and disconnection can be partially, if never completely, healed through what Williams (2023) terms “Indigenous radical hospitality” (p. 332). This involves, in Williams’ words, working with “newcomers to deepen relationality to place through embodied and storied ways which draw on their own cultural narratives to understand the Indigenous knowledge of place, while developing relational solidarities with Indigenous Peoples” (p. 331). As a newcomer to this place, my recent work has sought to cultivate spaces of multi-species sociality and relational exchange between Indigenous, diasporic and settler perspectives as the city learns to reconstitute itself under conditions of climate change. I thank the editors and contributors of AJEE for offering continuous scholarly and personal support for this ongoing work.

AJEE gathers a community

By Peta J. White

When I think about human-induced climate change, I feel simultaneously deeply disappointed and relieved. My life has been dedicated to environmental education, including my PhD research focussing on transforming my own sustainable living practices and exploring my learning experiences. I applied self-study and autoethnography to learn how to live sustainably and then how to use these experiences as a platform from which I could educate future teachers (White, 2013, 2018). My commitment to environmental education still drives my research and teaching choices (Riley & White, 2019; White et al., 2020; Woollorton et al., 2021), my personal living practices, and my community activism endeavours. I feel relieved that I am working towards dismantling complex systems of multi-species oppression – I am on the right team.

The increasing occurrence and magnitude of climate impacts causes anxiety (for me and others) while the slow burn of societal change feels . . . slow and lacking leadership and united effort. That economies and governments are aspiring towards “green” practices while deniers now receive decreasing patience and airtime brings some relief. In these post pandemic years, I see/feel a change – but it’s the rate of change that matters.¹⁰ However, I now choose to not focus on the urgency and impacts in my educational endeavours . . . we need to focus on what is happening and why and what to do about it (not just the result of ongoing inactions).

My role as the Editor-In-Chief of AJEE enables some focussed effort highlighting generative ways forward. My role involves creating the space and systems/processes to enable quality

¹⁰As Haraway (2016) explains, “change on earth is not the problem; rates and distributions of change are very much the problem” (p. 73).

research to come together. A key part of this is supporting leaders (guest editors) craft special issues, enabling them to engage researchers from across the world. I am invested in building communities of scholars which present high quality research about important concerns in the field of environmental education. Encouraging and supporting special issues enables researchers to locate their research alongside others where a cumulative impact is possible. For example, the *Power and Politics: Re-engaging Environmental Education Research Within Critical Environmental Politics* (Volume 40 Issue 4 special issue provides broad exposure to how challenges and concerns are understood and being actioned.

AJEE is 40 years old this year (2024) making it one of the oldest journals in the field. AJEE is hosted by the AAEE and these roots grow deep and provide stability for environmental educators across Australia. This journal represents the culmination of effort from a strong community engaged in building and generating opportunities for many across these years. AJEE now publishes with Cambridge University Press, is gold open access (so everyone can read the manuscripts online for free), presents five issues in each volume (year), and is managed by nine Editorial Executives and 32 international Board Members. AJEE hosts a biennial research symposium and also contributes to the AAEE research symposium in the other year. AJEE actively builds community that invest in knowledge generation, communication and sharing while also mentoring and creating space for innovation. Each issue of AJEE includes multiple manuscripts representing effort from researchers, practitioners, participants and communities each fulfilling roles and responsibilities. It is the way that we all collaborate to share the findings and provocations needed in these Anthropocene times that inspires my voluntary participation.

Resisting and protesting the manufacture of the coexistent biodiversity and climate crises through education and research

By Hilary Whitehouse

I don't really manage ecoanxiety well at all. During any week, I swing from complete despair to optimism and back again depending on what I am reading and doing. The climate science reporting is full of, "oh shit, we didn't quite expect this acceleration in heat conditions" and 2024 will be an extremely hot year. "Non-linear systems" I mutter every time I read worse climate news.

I had a hard time during the previous Cairns summer, the dew point was so high, and the humidity well beyond oppressive. I lived in a lather of sweat. My local government councillor talks to me about heat problems in the Cairns CBD. Actions will eventually be taken. I do intend not to fry.

I volunteer with a local not-for-profit conservation organisation, the Bats and Trees Society of Cairns, which I joined after the mass heat death event of Spectacled Flying Foxes (SFFs) in November 2018 (for a longer discussion on this, see Whitehouse, 2024). SFFs are a highly endangered species. Less than 5 % of the original population remains. They are the major pollinator of Wet Tropics forests at landscape scale, yet they have been allowed to "disappear" (e.g., starve, get injured and die in many tortuous ways).

These feelings of frustration and anger cannot be wished away. Once you understand the true nature of multi-species injustices, the anger persists.

I am not hope-full. I personally avoid the term hope, it plasters over a lot of current sins. You can't wish for a good future, for any transformation and not put in the work. In Australia, volunteers are trying to save animals and plants while the people manufacturing the coexistent biodiversity crisis and climate crisis are paid substantial salaries (and bonuses). I am starting to speak up about the levels of demands on volunteers. Why is saving animal and plant life in times of climate disruption still largely unpaid work?

I think environmental educators have collectively done the best job possible when our politics are wedded to excessively large corporations destroying the fabric of life. I resent that billions of taxpayer monies are spent yearly on climate and environmental destruction and, comparatively, so little is spent on environmental and climate education, ecological restoration and renewal.

There are many times when I tell myself, “These may be the end of times, so enjoy yourself.” I do remember to take the many moments of wonder.

Professional educators and researchers carry the responsibility for promoting action and agency in the face of the omnishambles that are our education policies. Some real leadership comes out from AJEE and the journal networks. Interestingly, the AJEE work is voluntary and AAEE work is voluntary. The theme here is that volunteers are doing so much of the necessary things.

I take heart that so many people are doing what they can in their own spaces and places. I encounter people doing good work everywhere.

My professional stance is that everyone can do what they can with whom they can wherever they can. There are many brilliant resources available, an educator doesn’t have to reinvent the wheel. The challenge in all formal learning is taking climate and biodiversity seriously. Adult education and informal learning are areas where we can do further research.

Transformative actions for a regenerative world

By Sandra Wooltorton

Like Hilary, above, I do not manage eco-anxiety very well. In common with many of this co-writing group, it is within a profound sense of injustice against the more-than-human world – of which people are a part. We are all in this together, but the impact is disproportionate, discriminatory, irresponsible, and reckless given the future we co-create. I will give an example.

Along with the broader West Kimberley, Broome – in Yawuru Country – is a physically beautiful place to live, with Cable Beach being an enticing tourism drawcard (Poelina et al., 2024). The West Kimberley is a cultural landscape where the globally significant Martuwarra Fitzroy River is linguistically, culturally and biologically diverse. West Kimberley Indigenous cultures are kincentric ecologies, which means social, political, spiritual and ecological systems interconnect within a concept of Country (Milgin et al., 2020). This is the source of both resilience against and resistance to continuing colonisation; and Traditional Owners offer elements of this knowledge for climate healing (Knight et al., 2024). Indigenous knowledge provides hope for the world.

That said, climate change impacts have long been observed and documented in the West Kimberley (Dwyer, 2017) and disproportionately affect people whose food security and culture depends on the River hinterland. Simultaneously, cultural landscapes deteriorate when their interdependent cultural systems weaken. Now, government-corporate partnerships are ever-strengthening in their efforts to extract maximum profit from the Kimberley. The last 15 years has seen the effort to: industrialise James Price Point with a gas hub (Muecke & Dibley, 2016); close remote communities (Kagi, 2014); extract minerals without social licence (Poelina, Brueckner, & McDuffie, 2020); while fracking appears imminent (Environs Kimberley, 2024). Intergenerational trauma, grief and pain resulting from past and continuing colonial physical, socio-cultural and emotional assault are common here; while the youth suicide rate is at record levels (Dudgeon, 2017; Fogliani, 2019).

Like many environmental and social advocates in the Kimberley, my colleagues and I carry residual background anxiety, or is it anger or maybe it is rage, at the behaviour of private and public officials, and their inexplicable, devastating decisions about our common future. As some small redress, with my colleagues I create new knowledge, actions and strategies for mainstream regenerative transformation and we endeavour to be strong academic advocates and actionists. I stand with Indigenous philosophical positions and support Indigenous enterprises where possible. I participate in eco-social groups when feasible. My daily actions include walking with River and/or Forest or beach in a communicative way, including singing out to and creating poetry for Country, and I work and/or sit in my garden. I reject plastics of all types, and I do my best to keep my ecological footprint very low through actively using consumer power. I facilitate groups intent on a deeper experience of relationship with River. Indigenous and place-based philosophy gives me strength and hope.

I highly recommend the AJEE Volume 39, Issue 3: **Indigenous Philosophy in Environmental Education: Relearning How to Love, Feel, Hear, and Live with Place** with Guest Editors: Anne Poelina, Yin Paradies, Sandra Wooltorton, Mindy Blaise, Libby Jackson-Barratt and Laurie Guimond. I love every article, and regularly read them to find inspiration.

Concluding insights: An offering

As introduced at the beginning of this article, the composite approach is an evolving method involving insights from a community of scholars on a contemporary topic. This composite article invited the Editorial Executive from AJEE to respond to three prompts regarding climate change education. As we have ruminated on the above personal contributions, we have generated the following collective propositions as professional/researcher positions for working through the challenges of accelerating human generated climate disruption and related emotions of anxiety, anger and solastalgia:

1. The significance of engaging with diverse perspectives and knowledge systems, including Indigenous philosophies and materialist, relational and post-anthropocentric views.

Diverse perspectives and knowledge systems can help us to contextualise events and see issues from alternate vantage points. They can also help us to feel and think differently, or privilege perspectives which may have been historically silenced or ignored. We believe such acts are important in fostering creative and critical responses to the difficulties we face. The challenge is always to find or develop a perspective that suits you in your work and in your context. In these possibly dangerous times (see Gergis, 2024), the old certainties aren't always going to work. We may not have the luxury of debating universal / best / new or newer approaches to matters of concern. Therefore the onus on educators is to philosophically and materially discover what works for you and for your students at any point in time. Thus, we ask, what different orientations could you learn from to help you in your work?

2. Emotions, anger and concern as catalysts for action and activism.

A common thread in this article is the insight that although strong emotions such as anger and frustration may be negative psychologically, they can foster motivation for action and activism. They also signal our values and spark when we encounter injustices and inequitable power structures. Furthermore, we recognise the importance of not shying away from the challenging or difficult. Rather, by *staying with the trouble*¹¹ (Haraway, 2016), we avoid suppressing emotions and allow ourselves to sit with and feel the gravity of our socio-ecological predicament. When we are provoked by the injustice of socio-ecological events, this is a sign of our axiological dispositions. Simply, recognising and listening to our emotions can help guide us. Thus, we ask, what concerns do you have? How can you recognise emotions as a sign of compassion and connection to broader ecologies of the world? How can you channel your concern into a tangible action?

3. The value of fostering collaborative spaces/relationships/communities that empower people in the face of complexity, uncertainty and despair.

Collaboration and community was a significant element of this composite article. Initially, it is what motivated the project – the desire to work together, lean on each other and build a collective voice. Furthermore, it was an insight repeated by the many contributors' personal responses. It may seem straightforward, but we are stronger together. Bounded individualism does not help repair a fractured world. Importantly, we do not see community as a concept bound to human relationality; we live and function as more-than-human communities, entangled with and wedded to earthly

¹¹Haraway (2016, p. 1) writes that:

Trouble is an interesting word. It derives from thirteenth-century French verb meaning “to stir up.” “to make cloudy,” “to disturb.” We — all of us on Terra — live in disturbing times, mixed-up times, troubling and turbid times. The task is to become capable, with each other in all of our bumptious kinds, of response.

ecologies. We are also linked together technologically, virtually, and, right now, textually. We can find strength in this, but we also need to nurture community and empower each other. There isn't one way to do this. For example, it is becoming increasingly evident that strong and diverse collaborative groups and intergenerational communities are better placed to withstand and recover from severe climate events (Williams, 2023). What spaces/relationships/communities do you have or can you build to nurture you through complexity and uncertainty?

4. The importance of developing and integrating ethical responses and critical climate literacy in climate change education/research.

The contributors have expressed the need to further foster climate literacies, engage in purposeful research, and develop robust climate conversations as an ethical and material imperative. Climate change curriculum may sit on the outer of mainstream practice, however, as suggested by bell hooks (1989), we can still find a place on the margins to do our work of repair and recuperation without needing to be part of the status quo (which is clearly impoverished). There is a need to appreciate the links between what we value (aesthetics) and how we conduct ourselves in the world, in particular to love and care for the whole-Earth ecosystem (Ferguson & White, 2024). The goal of nourishing ethical places for educational discourse and praxis raises the question: in what ways can you enact ethical climate responses in your own education work? Furthermore, how can you share critical climate literacies in your networks? Ethical accountabilities and critical climate literacy can be an important antidote to denialist and/or dichotomous discourses and allow us to work towards regenerative futures.

5. Learning from places and multi-species entanglements

As a collective, we value place-responsive learning. We do not learn alone, we learn together – relationally – in multi-species worlds (Riley et al., 2024). Moreover, in solidarity with Traditional Owners across Australia, we can learn to care for Country. These embodied embedded positionalities were woven through many of the contributions of this composite article. These are not new ideas for environmental educators, but for us, they are an important set of practices that remind us to look up and attend to where we are. We belong to a more-than-human world, a broad commonwealth of life that includes but also exceeds human culture and all human knowing (Abram, 2024). We do not need to venture far to acknowledge this. But it helps to be creative and carefully consider the stories of which we are a part. This leads us to ask, what can you learn from your local places? How *are we* these places? And, how can we transform ourselves in response to the changing climate, for the betterment of all communities and multi-species entanglements?

6. Acknowledging tensions in environmental and climate change education

As we have worked together in compiling this article, some tensions emerged from our discussions. Notably, we raise for consideration the perception that environmental education is an extension of environmentalist ideology. Tropes for defining environmental education include “saving nature” through the “greening” of curricula and engaging in education for sustainable development (famously challenged by Jickling, 1998). Whose concept of nature is environmental education saving and perpetuating? Whom and what are we trying to sustain? Environmentalist ideals derived from Euro-Western knowledge systems present a tension when held alongside ancient knowledges and diversely situated perspectives of place (such as offered in point 1 above). They can also be manipulated by political forces which dichotomise and fracture regenerative work. Thus, we hope for (and work towards) environmental education that is far more capacious than universal definitions of environmentalism can accommodate. For example, we believe it helpful to recognise that the work we do in environmental and climate change education includes affirmative ethics,¹² equity, social justice and much more. Simply, we think the field would do well

¹²As Braidotti (2023) explains, “Affirmative ethics is the establishment of mutually empowering relations based on cooperation and the productive combination of the specific degrees of intensity or *potentia* of each living entity. It aims at increasing each entity's capacity to preserve themselves against adverse forces. Entities and individuals grow thanks to a collaborative ethical and social sense of community” (p. 98).

to conceive environmental education pluralistically. Thus, we ask, what does a pluralistic climate change education look like for you? How can we see the coexistence of multiple worlds, multiple ways of being/doing/knowing and learn from uncommon and even incommensurable diversities, rather than tug in differing directions? Lastly, how might environmental education break free from the constraints of Euro-Western knowledge systems, enabling diverse cultural patterns practiced and shaped for millennia to become everyday ways of learning and working?

Climate change education work has many complexities and every educator has to deal with their own context, resources and community. Collectively, we offer these narratives not as a solution, but as a potentially generative heuristic useful for navigating the complexity and uncertainty of contemporary times. This uncertainty is unlikely to end, at least in the lifetime of us authors. Climate variability and rapid change will be a feature of our lives and those of our students. Given the longevity of the dilemma, we can seek some kind of appropriate comfort, and even power, in locating the place of uncertainty in present/future education practices. Can narratives stabilise feelings enough for us to marshal sufficient resources as environmental educators for a future uncertain? As a group of writers, we trust that these thoughts offer you, the reader — the broader community — with another tool or perspective to approach the desire for hope of collective change in education.

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