Vol 6 No 1 2023

The Ecological Citizen

ISSN 2515-1967
A peer-reviewed journal
www.ecologicalcitizen.net

CONFRONTING HUMAN SUPREMACY IN DEFENCE OF THE EARTH

The Ecological Citizen Vol 6 No 1 2023

Sign up for e-alerts at: www.ecologicalcitizen.net/#signup

For more information on the journal visit: www.ecologicalcitizen.net/about.html

A selection of contemporary visual art is interspersed between the text-based content, including the painting of a raven by Sabra Crockett that is featured on the cover

Also published by *The Ecological Citizen*

https://blog.ecologicalcitizen.net/

https://rewilding.ecologicalcitizen.net/

From darkness back into the light: Humanity's rewilding imperative

Joe Gray and Eileen Crist

Joe is production editor and Eileen is an associate editor of the journal. Along with Ian Whyte, who is also an associate editor, they commissioned the selection of pieces in this issue that relate to rewilding.

Keywords: biodiversity; conservation; ecological restoration; protected areas; rewilding
Citation: Gray J and Crist E (2023) From darkness back into the light: Humanity's rewilding imperative. *The Ecological Citizen* **6**(1): 3–8.

Domestication, extirpation and simplification: These are the drivers of wilderness loss. Through them modern civilization has thrown an asphyxiating cloak over a world where ecological vibrancy, diversity and complexity were once ubiquitous. The magnitude of this many-layered wreckage resists description and perhaps even defies comprehension. What can be stated with a clarion certainty, however, is that accepting the wild's suffocation as an irreversible reality only intensifies the tragedy.

Mercifully, a powerful challenge to such an acceptance comes from a burgeoning fellowship of Earth citizens who are calling for the cloak to be peeled back, so that non-human life has a chance to rebound and the brilliant light of nature's diversity can shine again. These people, us among them, are proponents of rewilding, which is a uniting theme for many of the pieces in the present issue. These contributions add to a body of content on rewilding that we have brought to readers in recent years, including through our role as co-publisher, in 2020, of the *Global Charter for Rewilding the Earth* (https://is.gd/rewildingcharter).

Rewilding as reparation

Running through every rewilding initiative is the intent of reparation. This offers a counterpoint to the constant aggressive taking that characterizes civilization's nature colonialism. Rewilding is *giving back* to the natural world without tallying what we humans might "get" in return. Considered at a planetary level, it is a wholehearted affirmation to set the Earth free, allowing her full expression of her ecological and evolutionary arts. The battle cries are: *Return lost species! Give wildlife safe passage! Free large-scale ecologies! Maximize evolutionary potential!*[1]

This contemporary response to wilderness loss and defaunation may yet demonstrate that we have the sight and will to free ourselves from the bind of human supremacy that is devastating all complex life on Earth. Such a release might begin with the recognition of our love for the planet that birthed us, and grow to encompass a grieving of losses, a rejoicing for what yet survives and the performance of small and big acts of reparation for the natural world.

The beginnings of a movement

Rewilding has undergone a mushrooming of popular and academic interest in recent years, but its origins as a concept date back at least three decades.[2] The *Oxford English Dictionary* cites a February 1990 article in *Newsweek* as the earliest use of the term "rewild" in print, within a report on the radical environmentalists of Earth First! (Foote, 1990: 32):[3]

> *Their forebears are the earnest hippies who, 20 years ago, emerged from the first celebration of Earth Day with plans to do some recycling, switch to nonphosphate detergent and donate $25 a year to the Sierra Club. Today they are eco-guerrillas, radical environmentalists who have turned to outrageous—and sometimes illegal—tactics in their war against "greedheads" and "eco-thugs." Militants vow not just to end pollution but to take back and "rewild" one third of the United States.*

A small group of these radicals launched the magazine *Wild Earth* soon after, and the word "rewilding" first appeared in an article by John Davis in the winter 1991–92 issue. Davis, who today is the executive director of The Rewilding Institute, credits Dave Foreman as crafter of the term and notes that its original meaning focused on wilderness recovery. The crafter is no longer with us, as he died while the present issue was being prepared. In an article starting on page 77, Davis shares his tribute to Foreman, a man who "changed and expanded the way we do conservation in North America and inspired conservation activists and biologists to think big, wild and connected throughout the world."

Since the seeding of the term, rewilding has indeed germinated into a broad movement, with diverse manifestations, a range of scales, local nuances and a global reach. These developments are all the more impressive given the numerous barriers that can potentially hinder positive action. "The greatest impediment to rewilding," wrote conservation biologists Michael Soulé and Reed Noss in their classic 1998 *Wild Earth* essay, "is an unwillingness to imagine it." Several articles in this issue illustrate both the breadth of rewilding and that willingness to envision it, as the movement has gathered momentum around the world.

In her paper beginning on page 45, Sophi Veltrop (outreach manager at Northeast Wilderness Trust) explores the different manifestations, including active rewilding, passive rewilding and the rewilding of ourselves as humans. "Together," she writes "rewilding the land and rewilding ourselves work hand-in-hand to offer a hopeful, realistic path forward in the face of climate

change and biodiversity loss." A key observation in Veltrop's article is that one need not "work for a conservation organization to be part of the rewilding movement." Rather, it is something that can be encouraged and practised by individuals or small groups, operating on a more intimate scale.

Exemplifying local nuances, the conservationist Chris Gibson, in a Reflection starting on page 16, considers how the vision of a charity in the UK to create a network of insect-friendly pathways across this crowded island can be seen as rewilding the skeleton. "Nurture the skeleton," he writes, "and as and when times and conditions allow, a new flesh will weave itself around those old bones." Gibson also notes – reinforcing the above-mentioned observation from Veltrop's piece – that "anyone anywhere can contribute: whether along a road verge or in a field or even across a whole estate, the more connected the better."

Finally, in an article beginning on page 29, which evidences the spread of rewilding, Lise-Marie Greef-Villet (communications manager for the Peace Parks Foundation) reports on a suite of positive developments aimed at bringing wildest Africa back to life. "Just a decade ago," she begins, "Zinave National Park in central southern Mozambique stood eerily silent – a once-abundant wilderness decimated by decades of relentless human impacts. Today, however, the park abounds with more than 6,500 animals from thirteen reintroduced species."

Rewilding as a cornerstone in Earth's recovery

Rewilding reflects the ecological and ethical sensibility to return large portions of the natural world to self-governance. Inspired by respect for the intrinsic value of the more-than-human world, it aims to set free terrestrial, marine and freshwater ecologies to their non-human dwellers and their inherent processes. In achieving this aim, we must enable places that have been impoverished by human encroachment, especially that of an industrial kind, to regain their wildness. In this way, they can become ecologically richer and more complex in processes, food webs, species compositions and evolutionary becomings. In the words of conservation biologist John Terborgh, "rewilding is the best hope for restoring something resembling primordial nature on this overstressed planet."

Rewilding requires that we look toward the past for the ecological and evolutionary knowledge that is critical in restoring wildness to landscapes and waterways. It is not, however, about fixing ecosystems in some historic state. Rather, by reinstating extirpated species and processes, and removing anthropogenic structures and obstacles, nature is set loose to find new creative and regenerative patterns, ones which we should neither specify in advance nor aggressively manage. As Soulé and Noss have noted, "rewilding is critical in restoring self-regulating communities." In other words, it establishes conditions for nature's aboriginal dynamism, creativity and exuberance.

Of course, rewilding is not the only arm of conservation biology working to restore the richness and complexity of the Earth's living systems. A closely allied branch is ecological restoration. In this issue, Usha Rajagopalan (a

conservationist in India) writes on the rehabilitation of a lake in Bengaluru while Richard Manning (an environmental journalist in the USA) describes the restoration of life-promoting fires in the Gold Creek watershed in Montana. These contributions start on pages 32 and 20, respectively.

Serving to reinforce both rewilding and ecological restoration are projects targeting a substantial increase in the amount of land and sea that is given protected status. Beginning on page 81, we include a tribute by Tony Hiss to EO Wilson, who recently passed away. Among Wilson's numerous major contributions to conservation, his last few years saw him championing Half-Earth – the proposal to set aside half of the planet in reserve. EO Wilson envisioned this aspiration as "the conservation of eternity," while urging humanity that "doing something big is our only hope" (quoted in Hiss [2014]).

In these times, we cannot ignore the fact that increasing levels of consumption, a growing human population and sprawling industrial infrastructure will stymie the efforts of conservation biology. In the face of this, rewilding, ecological restoration and legislation for generous nature protection can be cornerstones for Earth's ecological rehabilitation. Their uniting theme is a recognition that there must be places where non-human needs are at the fore. Equally important, though, is that societies transform themselves to achieve harmony with the wider living world in those landscapes that we shape to meet our own wants (Crist *et al.*, 2021).

The power of storytelling

For the Earth's course to be steered from one of mass extinction to a path of returning life, it will require, in the words of Amy Lewis, "the mobilization of leadership and public action on an unprecedented scale," and perhaps a "partial reinvention of civilization." Lewis is chief policy and communications officer at the WILD Foundation, which is an organization working to build a global movement to protect wilderness and attain the goal of protecting half the planet. In an article starting on page 66, Lewis writes about the potential role for storytelling in inspiring such a reinvention. Reading her uplifting prose is just one reason why we are excited to be launching, in parallel with the publication of this specially themed issue, a new dimension to *The Ecological Citizen* known as *Rewilding Successes*.

Figure 1. A section of the Elwha River, after dam removal (photo by Richard Probst [CC BY 2.0; https://creativecommons.org/licenses/by/2.0/]).

Available at https://rewilding.ecologicalcitizen.net/, *Rewilding Successes* is a dedicated blog-style platform for authors to share inspiring stories about nature's rebounding from anywhere on the planet. There are already eight live stories, spanning four continents, and we will continue to publish further pieces as they come to us. The initial set of stories includes, among a wide diversity of pieces, the inspiring tale of the Elwha dam's removal (Figure 1).

Bearing WITNESS

Another relatively recent development for *The Ecological Citizen* is our launch of the WITNESS category (see https://is.gd/WITNESS for more information). The goal of this nascent series is to bear witness to the losses of lifeforms, lifeways and places that humanity's no-limitations growth is driving. The roots for this category were established in the journal, but now, with the publication of a partner piece to the present editorial on *Earth Tongues* (Gray, 2023), it has sent out suckers that have sprung up on our blog; we hope that it will now grow in both venues. If you would like to contribute to the series, please see Box 1.

The first WITNESS post on the *Earth Tongues* blog offers a personal perspective on the loss of wilderness and the promise of rewilding, and it includes the following passage with which we shall end (Gray, 2023):

> *Rewilding is not a magic wand that can quickly undo the deathly spells we have cast in our woefully misguided quest to exert an autocratic control over our fellow Earth-kin. Nevertheless, it can catalyse the process of recovery and it can make the otherwise-impossible a reality, not least through the reintroduction of extirpated species to places that are unreachable by natural recolonization. As such, it is—from a planetary perspective—one of the brightest lights that burn in the twenty-first century.*

Box 1. Call for contributions to the WITNESS series.

So much environmental thought stays inside the abstract space of philosophy, policy recommendations or debates. With this category, we stay close to the ground: To bear witness to the losses of lifeforms, lifeways and places that humanity's no-limitations growth is driving. To remember the Earth realities we love and are fighting to preserve.

- We are seeking pieces for the journal of around 1000–1500 words, with up to ten references, that describe such a loss. Contributions might focus on a threatened species, a habitat on the wane or some other example of human-caused ecological decline, and they should offer suggestions, if possible, as to how the loss might be halted or even reversed.
- To enquire about submitting your work, please use the following link: https://www.ecologicalcitizen.net/contact.html. And for an example of the style of these articles, please see the first piece in the series here: https://www.ecologicalcitizen.net/article.php?t=witness-order-sirenia.
- Further information is available at: https://is.gd/WITNESS.

Notes

1 While battle cries do not generally come with endnotes, we will clarify what is meant by the pithy "Maximize evolutionary potential!" Evolution by natural selection works with the material of genetic variation. Thus, when populations of animals, for instance, are massively reduced, evolution has less genetic variation to work with toward the emergence of varieties, subspecies and new species.

2 Reed Noss has observed that the idea of rewilding can be traced much further back, to the work of ecologist Victor Shelford beginning in the early 1930s.

3 We cite the version of the article that appeared in the international edition of *Newsweek*, but the *Oxford English Dictionary* references a version published a week earlier in the US edition.

References

Crist E, Kopnina H, Cafaro P *et al.* (2021) Protecting half the planet and transforming human systems are complementary goals. *Frontiers in Conservation Science* **2**: 761292.

Davis J (1992) A minority view. *Wild Earth* **1**(4): 5–6.

Foote J (1990) Trying to take back the planet. *Newsweek* (International Ed.), 12 February: 32–3.

Gray J (2023) WITNESS: The dissipation of wildness. *Earth Tongues*, 11 January. Available at https://blog.ecologicalcitizen.net/2023/01/11/witness-the-dissipation-of-wildness/ (accessed January 2023).

Hiss T (2014) Can the world really set aside half of the planet for wildlife? *Smithsonian*, September. Available at https://is.gd/r970EO (accessed January 2023).

Soulé M and Noss R (1998) Rewilding and biodiversity: complementary goals for continental conservation. *Wild Earth* **8**: 19–28.

Terborgh J (2010) Why we must bring back the wolf. *The New York Review*, 15 July. Available at https://is.gd/vD6thJ (accessed January 2023).

The price of wildlife: Trophy hunting and conservation in Africa

Merrill Sapp

Merrill is a cognitive psychologist at Stephens College (Columbia, MO, USA).

Keywords: conservation; human-wildlife coexistence; values
Citation: Sapp M (2023) The price of wildlife: Trophy hunting and conservation in Africa. *The Ecological Citizen* **6**(1): 9–11.

It has often been claimed that trophy hunting plays a crucial role in supporting conservation in Southern and Eastern Africa (e.g. Dickman *et al.*, 2019; International Union for the Conservation of Nature, 2016). Underpinning this claim is the assumption that unless wildlife provides a clear personal or community financial benefit, people in rural Africa will not protect animals or land. That is, the income generated from trophy hunting is necessary – or so it is claimed – in order to incentivize rural Africans to prevent land development that would leave no home for animals.

However, rural Africans are not a homogenous group; their values and opinions differ as much as any people across a continent. Reports about what 'African people' want or think often ignore this diversity, and also fail to consider the factors that shape those opinions. Many rural Africans in fact consider wildlife to be part of their cultural heritage and are motivated to protect animals for their inherent value (Lagendijk and Gusset, 2008; Griffiths, 2017). It is true that there are Africans with high wildlife exposure who have no attachment to dangerous animals. After all, when people feel that their lives, families, homes or livelihoods are at risk, it is understandable that they would resent animals and the policies that protect them. However, research shows that African people from a variety of different backgrounds are willing to support protection for wildlife if they feel safe, regardless of economic incentive or potential for agricultural loss (Lagendijk and Gusset, 2008; Packer, 2015; Kamau and Sluyter, 2018). Even those employed in the trophy hunting industry may feel conflicted – with some expressing bitterness about the colonial culture perpetuated by trophy hunters (Koot, 2019), and others resentment at foreign interference in their livelihoods or decisions about wildlife (Thondhlana *et al.*, 2020).

The exclusionary history of parks and reserves in Africa has contributed to the conflict of today. In many places, Africans were prohibited from areas

where they could be exposed to animals and learned nothing about them (Griffiths, 2017). These people may see no reason to protect wildlife or their habitats. One ranger in Uganda remarked that he used to know very little about animals and thought there was no value in conservation, but that this changed after he interacted with wildlife. Now he realizes that the animals have inherent value and need protection, even appreciating them as our "helpless brothers" (Moreto *et al.*, 2016: 659). According to Craig Packer (2015: 48), the Lion Guardians program in Kenya transformed lion killers into avid conservationists, "not least because their traditional skills and newfound knowledge were being appreciated and rewarded."

Intolerance of wildlife is, in other words, conditional. Employment in animal protection can clearly lead to feelings of connection, but safety seems to be the primary criterion for willingness to accept wildlife (Lagendijk and Gusset, 2008; Goodale *et al.*, 2015; Kanksy *et al.*, 2016). In turn, this suggests that economic incentives without feelings of safety are unlikely to result in acceptance of dangerous wildlife.

Besides being a simplistic narrative, the claim that rural Africans will not protect space for animals unless there is monetary incentive implicitly reinforces the anthropocentric idea that animals are primarily to be considered as resources for human use. That is, if we cannot live with them, we might as well sell hunting excursions. However, approaches that commodify wildlife risk expanding exploitative use or condemning wildlife that lacks profit value. The ideology that posits a choice between human life or wildlife can also discourage investment in solutions for successful coexistence, such as improved animal husbandry leading to less human exposure to predators (Sillero-Zubiri *et al.*, 2007).

Ecocentric conservation honors the multi-species interdependencies to which humans belong. It recognizes the inherent value of wildlife, though humans also ultimately benefit from an ecocentric approach – if we take care of the ecosystem, it will take care of us. Ecology-based conservation can find balance within a dynamic ecosystem and avoid perpetual competition between humans and animals. This is a lesson we can learn from communities around the globe that live by sustainable traditions.

The claim that trophy hunting is essential to incentivize rural Africans to protect wildlife and habitats should be considered critically, including the conditions under which it is true or not true. Increasing human safety is an essential step to reframe the ideology of human life versus wildlife and support an ecological culture. Underestimating the willingness of local people to make conservation work could lead to unfortunate decisions. The importance of pride and cultural heritage should not be overlooked and are reason for hope that approaches which respect the inherent value of wildlife will be welcomed by those impacted.

References

Dickman A, Cooney R, Johnson PJ *et al.* (2019) Trophy hunting bans imperil biodiversity. *Science* **365**: 874.

Goodale K, Parsons GJ and Sherren K (2015) The nature of the nuisance – damage or threat – determines how perceived monetary costs and cultural benefits influence farmer tolerance of wildlife. *Diversity* **7**: 318–41.

Griffiths M (2017) Heritage lost: The cultural impact of wildlife crime in South Africa. *SA Crime Quarterly* **60**: 45–50.

International Union for the Conservation of Nature (2016) Informing decisions on trophy hunting. Available at https://is.gd/2bn6L9 (accessed October 2022).

Kamau PN and Sluyter A (2018) Challenges of elephant conservation: Insights from oral histories of colonialism and landscape in Tsavo, Kenya. *Geographical Review* **108**: 523–44.

Kansky R, Kidd M and Knight AT (2016) A wildlife tolerance model and case study for understanding human wildlife conflicts. *Biological Conservation* **201**: 137–45.

Koot S (2019) The limits of economic benefits: Adding social affordances to the analysis of trophy hunting of the Khwe and Ju/'hoansi in Namibian community-based natural resource management. *Society and Natural Resources* **32**: 417–33.

Lagendijk DD and Gusset M (2008) Human-carnivore coexistence on communal land bordering the greater Kruger area, South Africa. *Environmental Management* **42**: 971–6.

Moreto WD, Lemieux AM, Nobles MR (2016) 'It's in my blood now': The satisfaction of rangers working in Queen Elizabeth National Park, Uganda. *Oryx* **50**: 655–63.

Packer C (2015) *Lions in the Balance: Man-eaters, manes, and men with guns*. University of Chicago Press, Chicago, IL, USA.

Sillero-Zubiri C, Sukumar R and Treves A (2007) Living with wildlife: The roots of conflict and the solutions. In: Macdonald D and Service K, eds. *Key Topics in Conservation Biology*. Blackwell, Oxford, UK.

Thondhlana G, Redpath SM, Vedeld PO *et al.* (2020) Non-material costs of wildlife conservation to local people and their implications for conservation interventions. *Biological Conservation* **246**: 1–9.

Ground series
Mary Waltham

Ground draws attention to the often-overlooked soil that we walk on, harvest from and excavate. Using only natural materials as pigments, the paintings reveal aesthetic beauty, with varied texture and colour. All the soils were sourced locally.

Information about each soil type is provided here:
https://www.ecologicalcitizen.net/pdfs/soil.pdf

This page contains Ground 1 (top-left), Ground 2 (bottom-left) and Ground 9 (bottom-right). Ground 10, 12 and 19 appear in numerical order on the pages that follow.

Rewilding the skeleton: A vision for nature's rebounding on a crowded island

Chris Gibson

Chris is a conservationist, ecologist and natural historian who lives in Wivenhoe in the UK. He worked for many years at Natural England, a governmental nature conservation body. For more about Chris, see www.chrisgibsonwildlife.co.uk.

Keywords: rewilding; species reintroductions

Citation: Gibson C (2023) Rewilding the skeleton: A vision for nature's rebounding on a crowded island. *The Ecological Citizen* **6**(1): 16–19.

Every day as I walk around the village where I live in the UK, my ecological heart and soul are given a much-needed boost of eco-optimism by the resilience of nature. Our waterfront development is surrounded in block paving, that most unwild of habitats, yet despite the ravages of footfall and herbicide, nationally scarce plants thrive. Two in particular have colonized over the last eight years or so, well outside their natural range (and so at least partly attributable to climate change): Jersey cudweed and four-leaved allseed. And those are just the rarities. Many more plants thrive in the cracks, spreading their filigree adornment outside the confines of the harsh, straight lines that we in our 'wisdom' try to impose on the world, battering biodiversity and crushing creativity into submission. That to me spells hope, under our very feet (Figure 1).

This is but a microcosm of that which is all around us. Our countryside is parcelled, partitioned and poisoned – defiled through the arrogance of humankind. Ecological Armageddon is looming, and our insects are the new canaries in the mineshaft. All evidence points to a collapse of insect populations, in terms of both diversity and abundance, and there are knock-on impacts throughout the food chain (Goulson, 2021).

The response to this has to be an application of those well-rehearsed 'Lawton principles' to the country's spaces for nature: bigger, better and more joined up (Lawton *et al.*, 2010). And this in turn calls for rewilding – for some an anathema, for others a panacea for a whole suite of ecological problems. For me, the truth lies somewhere in the middle.

Like it or not, we are not going to see vast swathes of the UK countryside, in all regions, turned over to true rewilding any time soon. At least, if that is taken to mean a realm of 'disturbing megafauna' like bison and boar, kept in check

Figure 1. Block paving on Wivenhoe quay – a visual metaphor for 'rewilding the skeleton'.

by predators like wolves, and the natural and essential processes – unpalatable to some – of starvation and disease. Yes, we may have Knepp (1400 hectares) but the chance of contiguous Oostvaardersplassen-style and -scale rewilding (7500 hectares) is pretty limited at present over much of our lowlands (Tree, 2018; Vera, 2009), especially during what is a time of rising land demands for food security, renewable energy production and housing. While this energy production does not all need to be out in the countryside, and a significant fraction of the housing demand is not one of genuine need (relating as it does to the insatiable greed for second homes), the food security issues are undeniable. The Russian invasion of Ukraine and the self-inflicted choking of near-continental trade by Brexit have combined to expose the UK's major failings here.

So what can we realistically achieve instead, in the near term? I think that a project called B-Lines provides the basis of an excellent vision (Buglife, 2022). The B-Lines concept, launched as an aspirational map in 2021, seeks to create a network of insect pathways, connecting the best remaining wildflower-rich habitats across the country. A focus first and foremost upon connectedness, ensuring that wild creatures and plants can move to where they want and need to be, delivers resilience in the face of climate change. I see this as 'rewilding the skeleton' of an emaciated, nature-depleted landscape, one that allows the freedom of movement that is crucial to a living landscape and a healthy world. The beauty of it is that anyone anywhere can contribute: whether along a road-verge or in a field or even across a whole estate, the more connected the better. So long as a conservation initiative is good for insects (and most are), it will make a positive contribution.

Such nature networks are implicit in the EU Habitats and Species Directive (https://ec.europa.eu/environment/nature/legislation/habitatsdirective/) and are beginning to be developed across Europe, most notably the *Natuurnetwerk Nederland*, which has cross-border links from the Netherlands into other EU member states. Here, the focus is not just on insects, and it is surely no coincidence that the past decade has witnessed the spread of wolves from eastern Europe, through north Germany into the Netherlands and Belgium, and now into northern France (Lelieveld *et al.*, 2016; Rewilding Europe, 2022). The most fearsome, and most feared, predator of our continent is spreading naturally through some of the areas with highest human population density and greatest levels of nature depletion. Surely if Continental Europe can live with wolves, we in the UK can learn to live with more bees?

Without corridors and stepping stones, movement through the natural landscape becomes reliant on human (re)introduction, which itself depends upon opportunity, resources and the science or experience to understand what is needed. It can be done. And for some species – heath fritillaries, which will not move out of their coppiced woodland with cow-wheat (Warren, 1991), or large blues, which need their unique combination of microclimate, wild thyme and host ants (Thomas, 1989) – careful, expensive, politically vulnerable human intervention may be the only way. But such an approach is never going to be practical for more than a minuscule proportion of the biodiversity with which we share our islands.

We need to shift the mindset from deliverables that can easily be measured – number of hectares classed as nature restoration areas, kilometres of river improved and so on – to restoring the conditions that permit the processes upon which nature depends. In a world of unpredictable but undeniably extreme change, those key processes include migration, movement and adaptation. 'Rewilding the mind' – 'rewiring the mind' even – will help us to realize and accept that such processes are the key. Get the processes right and the tangibles – the habitat, species and vibrant ecosystems – will follow.

And we do have a precedent. When I was helping to roll out English Nature's 'Campaign for a Living Coast' 30 years ago, we recognized that many of the coastal habitats we value – the mudflats, saltmarshes, sand dunes and shingle beaches – are dynamic structures. They are reshaped and reformed all the time, often over very short timescales, by the processes of erosion, sediment transport and deposition. The 'critical natural capital' is not the habitats or species themselves, but the processes that underpin them, and the worst thing we can do is to strangle those processes. In the case of coastal habitats, this has occurred through the unyielding, suffocating straitjacket of concrete sea-defences, such as groynes, which have been designed to do just that: kill the processes.

And so back to B-Lines. You can have all the static nature reserves you want, but they are functionally dead without connectivity and natural processes. Nurture the skeleton, and as and when times and conditions allow, a new flesh will weave itself around those old bones. Whether our species is around to see it is another question.

References

Buglife (2022) *B-lines*. Available at https://is.gd/wAcWXt (accessed September 2022).

Goulson D (2021) *Silent Earth: Averting the insect apocalypse*. Vintage, London, UK.

Lawton JH, Brotherton P, Brown VK et al. (2010) *Making Space for Nature: A review of England's wildlife sites and ecological network*. Report to Department for Environment, Food and Rural Affairs (UK). Available at https://is.gd/RnPuFF (accessed October 2022).

Lelieveld G, Beekers B, Kamp J *et al.* (2016) The first proof of the recent presence of wolves in the Netherlands. *Lutra* **59**: 23–31.

Rewilding Europe (2022) *Carnivores make a comeback*. Available at https://is.gd/TvUCBZ (accessed September 2022).

Thomas JA (1989) Return of the Large Blue Butterfly. *British Wildlife* **1**: 2–13.

Tree I (2018) *Wilding: The return of nature to a British farm*. Picador, London, UK.

Vera F (2009) Large-scale nature development – the Oostvaardersplassen. *British Wildlife* **20**: 28–36.

Warren MS (1991) The successful conservation of an endangered species, the heath fritillary butterfly *Mellicta athalia*, in Britain. *Biological Conservation* **55**: 37–56.

Gold Creek

Richard Manning

Richard is an environmental author and journalist based in the USA.

Keywords: ecological restoration
Citation: Manning R (2023) Gold Creek. *The Ecological Citizen* **6**(1): 20–4.

In 1989, no one could have convinced me I'd ever want to see the Gold Creek drainage again. Then, it was a devastated wasteland hammered by the worst examples of rapacious logging driven by corporate greed. Further, it was a personal Golgotha, ground zero of an explosion in my own career as a journalist. To put it bluntly, it was the place that got me fired. Yet thirty-three years on here I stand, happy to see it.

The story of how this all came to be isn't just mine, but winds deeply in American history and the conquest of the West. Gold Creek is a watershed formed by a tributary of Montana's Big Blackfoot River, the river that runs through Norman Maclean's novella (1976) and the film based on it. Every sentient soul who lives where I live knows this river as the liquid narrative thread of our ecological history.

In the late 19th century, as railroad and copper barons began divvying up the proceeds of conquest, the United States adopted a number of steps to encourage exploitation. Railroad companies got vast land grants as an inducement to build lines and settlers got homesteads on timbered lands. The railroad lands in western Montana accrued eventually to a single corporation, the Plum Creek Timber Company, and the settlers' lands claimed under the Timber and Stone Act quickly transferred to the Anaconda Copper Mining Company, which needed the timber for railroad ties, mine post and beams and fuel for smelters. Those latter lands then passed to a timber giant, Champion International. Together the two corporations wound up owning 688,000 hectares in Western Montana, an area larger than the state of Delaware. In the mid 1980s, both corporations quietly abandoned sustained yield forestry to liquidate, to strip their own assets.

I was a newspaper reporter then in Missoula, and got wind of it. A photographer and I spent weeks driving the two-track logging roads of the Gold Creek drainage, a place where those industrial lands were heavily concentrated. We documented the outrage, clearcut by clearcut, every tree ripped from steep mountain slopes using some of the most abusive and cheapest possible logging methods, such as skidding logs straight downslope with bulldozers, thereby leaving trenches ready to erode to gaping gashes with

spring runoff. The corporations were free to do so under a commercial logic similar to that which allowed plantation owners to beat their slaves to death in the pre-Civil War South.

I wrote a series of stories for my newspaper that created such pressure on my bosses that they pulled me off the beat. So I quit the paper, retooled my career and went to work as an independent environmental author. What I had learned about corporate logging and corporate journalism made me crave independence. That work took me far and wide, around the world, a long ways from Gold Creek. Meanwhile, Champion International and the Plum Creek Timber Company did indeed cut and run, despite their denials right up to the end. They sold off their land at fire sale prices commensurate with the damage they had done.

Be grateful now that some people see catastrophe as opportunity. Champion almost immediately sold all of its land to Plum Creek, but shortly thereafter, The Nature Conservancy (TNC) began dealing with Plum Creek – ultimately buying outright more than 200,000 hectares of ravaged timber lands spread throughout western Montana. About 7,000 hectares of that was in the Gold Creek drainage, which altogether covers about 17,000 hectares. So far, TNC has restored and transferred almost 6,000 hectares to public ownership, either the Forest Service or the Bureau of Land Management (BLM), with another 2,000 hectares treated and transferred in the nearby Twin Creek Drainage. All of it is a giant project in restoration ecology now at work for almost two decades. As TNC finishes its work, it has been and will continue to transfer lands to BLM, to add to the considerable spread of public lands surrounding a massive landscape that includes the Rattlesnake Wilderness, Mission Mountain Wilderness and just to the east, the storied Bob Marshall Wilderness. It all hangs together, and a river does indeed run through it.

But unlike all those other places, the Gold Creek drainage has been considerably trammeled by humanity, and that's the issue daunting TNC's land managers: how one restores on this scale in the wake of such devastation.

They got some help in this from a couple of long-dead homesteaders named Primm. It's not quite true I turned my back on Gold Creek when I left my newspaper job. I returned the following year on a tip from a friend. An elk hunter who had been exploring the drainage, he got lost, and stumbled onto a miracle. I followed his directions to see for myself, and I found it, there, smack in the middle of the clearcuts, up an abandoned logging road – a hallucinatory vision that transported me back a couple of centuries. Its salient feature was a stand of monarch ponderosa pine hundreds of years old, trees I could not reach around, towering sentinels over a series of meadows, willows, sedges, riparian splendour. Under the trees stood a couple of log buildings and a tombstone over the grave of Mahala Primm, the homesteader who had died and was buried here in 1977. Her husband had died earlier, and heirs sold the land to Champion, but the timber corporation for whatever reason never logged it, probably because the old-growth trees were too big to fit their mills.

The sight of this sylvan wonder on a sunny June day in no way invokes the chaos of wildfire, the sweeping walls of flame that have become the norm in

the Northern Rockies. Appearances notwithstanding, this is all about fire, even here. This past summer, I held a series of conversations with three of TNC's land managers, Chris Bryant, Michael Schaedel and Steven Kloetzel. Their training and backgrounds are mostly in forestry and this place was forest, but we mostly talked about restoring fire, not forests. And in this matter, the Primm property is their model (Figure 1).

Bryant told me a couple of stories. First, in 2003 one of the area's frequent and large wildfires swept through the drainage, which may contradict one's notion that clearcuts leave nothing to burn. The industrial timber lands were re-seeded chockablock with trees all the same species and age, by the time of the fire a decade or two old. Those plantations burned like bombs – a searing, uncontrollable fire that more or less sterilized everything in its path. As this was happening, a TNC contractor was camped in a canvas wall tent on the Primm property, and the same fire swept that place. The contractor returned to find his tent still standing. Only the guy ropes had burned. The monarch ponderosa barely noticed the fire's intrusion. They'd been there and done that before.

The explanation for this is more revealing. Schaedel tells me that TNC's staff happened to find an old-line Champion forester who had known the Primms well. In certain times of year, he would help them set fire to their land, just as the native people who came before had done for centuries before. Fire was the technology that nurtured what we today regard as sylvan wonder.

"What's missing? Our cultural relationship with fire. We have no real cultural relationship with fire," says Bryant.

There are two crucial points embedded in this quote, and of course the physical act of restoring fire to the land is one of these. And yes, fire comes of its own accord now with global warming, but that's a problem too; catastrophic sweeps of fire that can destroy in a single afternoon years of the best laid plans

Figure 1. A fire burning on the Primm property (photo copyright Jeremy Roberts/ Conservation Media).

of ecologists and foresters. Both a long history of fire suppression and plantations have loaded the landscape with fuel so that it's now a tightly coiled spring ready to release. The trick is to undo the spring's tension bits at a time: to deliberately burn some and leave some, thin some, create breaks, take advantage of previous fires, steer the landscape toward diversity, disorder, chaos even, to let it become what it wants to become, even when fire comes. Restoration here is not imposing a forester's blueprint on the land. The land managers are really just trying to come up with a rough outline. Fire chooses the verbs and nouns, the reveal and reversal that fills in the narrative.

This is where the notion of restoration of human culture to accept fire underscored almost all of the conversations with the TNC people.

Bryant has stressed throughout that his staff early on worked to establish strong relationships with the nearby reservation, the Confederated Salish and Kootenai Tribes, the people who inhabited this landscape pre-conquest and still manage vast tracts of forest, part of the Mission Mountain Wilderness and now the National Bison Range. TNC has directly engaged tribal leaders and experts, and asked them what they wanted to see on the land, and yes, they said fire. But there is a more revealing story.

Not far from Primms' meadow, there is another, but with a less fortunate history. In spring, during runoff, it was often invaded by an odd subset of humanity called here "mudders," people who wield hot-rodded four-wheel drive vehicles to torture the land for their amusement. Even Champion's managers could not stomach this and so bulldozed a berm to keep the mudders out. When tribal leaders saw this spot decades later, their response was: Where are the camas?

Travel back roads and hiking trails long enough in Montana in spring, and you will be treated to a mesmerizing mirage, a vision ahead in a clearing of a deep blue expanse that appears for all the world like a shimmering surface of a lake where there never was one before. This is a camas bloom, the pale blue flower of a plant (*Camassia*) with a root that was an important food source for Salish people, still highly regarded.

The berm to keep out the mudders had created a ditch that drained the meadow. Camas need wetlands. The tribal people's observation told TNC there is more restoration to be done.

There is, however, looming is this whole story an even more important bit of cultural restoration. Any US environmentalist with a grasp of the politics would undoubtedly cringe at my earlier mention of BLM's role in this project. The bureau has a terrible reputation and deservedly so, known aptly as the Bureau of Logging and Mining. Yet everyone I talked to about this work had nothing but praise for the Bureau's role here, and much of that work proceeded during the Trump Administration, when the BLM was headed by William Perry Pendley, a man openly hostile to public lands and environmental restoration. This is not as contradictory as it sounds, a pretty well-known phenomenon of US federal agencies. They tend to be responsive to local sentiment and cultural pressure. More than any other place I know of, the Blackfoot River drainage has for generations harboured and nurtured a respect for the landscape, centuries'

worth of deep respect tracing back through the Salish and characters like Norman Maclean and Bob Marshall (one of the founders of the Wilderness Society). This is the necessary foundation of restoration. It builds only over generations and patient work through a process the TNC managers call "bad coffee and shoe leather," but it builds.

There's an odd little sidebar buried in this story that I need to disclose, both for journalistic honesty but also because it illustrates this larger point. Back in my newspaper days, I met a young environmentalist who was new to Montana, but letting the land and the people of this place shape her values and aspirations. We were married shortly thereafter and she embarked on a career that engaged through thirty years of bad coffee and shoe leather many of these very acres and these very people working to restore the wild of western Montana. One thing led to another, and in 2021, President Biden appointed Tracy Stone-Manning director of the BLM, so she now heads the bureau that oversees 247 million acres, ten per cent of the land area of the United States. She brings to the job the values and skills forged in this very landscape. This is another way restoration scales.

Reference

Maclean N (1976) *A River Runs Through It and Other Stories*. University of Chicago Press, Chicago, IL, USA.

Raven
Sabra Crockett

From the artist: "I am a painter who focuses on birds and other animals in the Southeastern region of the United States. I have painted a series of extinct and endangered birds, and also painted some conservation success stories. I try to paint creatures in a realistic manner so that the viewer has an immediate connection to them."

Sandhill Crane (left)

Ivory-billed Woodpecker (right)

Sabra Crockett

Higher-quality versions of artwork from this issue:
https://www.ecologicalcitizen.net/artworks.php?v=6&n=1

Black-and-white Warbler
Sabra Crockett

Higher-quality versions of artwork from this issue:
https://www.ecologicalcitizen.net/artworks.php?v=6&n=1

Florida Black Bear
Sabra Crockett

Higher-quality versions of artwork from this issue:
https://www.ecologicalcitizen.net/artworks.php?v=6&n=1

Bringing wildest Africa back to life

Lise-Marie Greeff-Villet

Lise-Marie is communications manager for Peace Parks Foundation, which is based in Stellenbosch, South Africa (https://www.peaceparks.org).

Keywords: biodiversity; conservation; rewilding; species reintroductions; wildlands
Citation: Greeff-Villet LM (2023) Bringing wildest Africa back to life. *The Ecological Citizen* **6**(1): 29–31.

Just a decade ago, Zinave National Park in central southern Mozambique stood eerily silent – a once-abundant wilderness decimated by decades of relentless human impacts. Today, however, the park abounds with more than 6,500 animals from thirteen reintroduced species (including elephants, giraffe, apex predators such as leopard and hyena, and soon, rhinos), standing out as one of southern Africa's greatest rewilding success stories. Against all odds, the previously silent Zinave – a core component of the Great Limpopo Transfrontier Conservation Area – will soon become Mozambique's first 'big five' national park, completing a remarkable return to former glory.

Home to a dazzling variety of terrestrial, marine and coastal wilderness areas, southern Africa is one of the most ecologically important regions on the planet. With wild biodiversity increasingly under threat, the creation and expansion of protected areas, including the restoration of fully functioning, wildlife-rich ecosystems, is vital to secure and preserve this remarkable natural heritage.

Zinave's revitalization comes as a result of years of backbreaking work in securing the 408,000 ha open system and the 30,000 ha sanctuary therein, implementing effective conservation management strategies, putting in place required infrastructure, employing and training a productive staff component and bringing wildlife back to re-establish fully functioning ecosystems.

With limited resources, governments in southern Africa cannot do this work on their own. This is where non-profit organizations are stepping in, helping to facilitate the restoration of conservation areas by securing and rehabilitating natural habitats and bringing animal populations back into areas from which they had been extirpated.

Established in 1997, Peace Parks Foundation – founded by former South African President Nelson Mandela, business leader Anton Rupert and Prince Bernhard of the Netherlands – has been pioneering the charge to restore and reconnect wild African spaces, such as Zinave, by playing a central role in the

establishment and management of transfrontier conservation areas (TFCAs) across the southern part of the continent. As part of these efforts, the Foundation has successfully reintroduced more than 15,000 mammals – from the tiniest antelope to the African elephant (the world's largest land animal; Figure 1) – into core anchor parks within these large cross-border ecosystems.

Restoration and rewilding already present a unique, highly complex challenge, which is further complicated in the African context. Here, the restoration of wilderness areas requires a multi-faceted, intricate and patient approach that, first and foremost, needs to foster a harmonic co-existence between non-human nature and human populations living in challenging socio-economic circumstances.

In order to make this effective, Peace Parks has successfully brought government leaders together, facilitating agreements to jointly protect and conserve natural wild areas shared between countries. On a local and regional level, rewilding lays the basis for a tourism and wildlife industry that provides much-needed income for the communities living in and around protected areas. On a grander scale, Peace Parks' role in the establishment of ten TFCAs encompassing more than one million square kilometres of conservation space that houses the world's largest populations of the great megafauna, is providing a blueprint for combatting climate change in the face of senseless, widespread destruction of the wild areas upon which Earth's future relies.

Zinave National Park, which Peace Parks co-manages together with Mozambique's Administration for National Conservation Areas (ANAC), is just one shining light in the Foundation's history of restoration initiatives. In southern Mozambique, the partnership between ANAC and Peace Parks has been instrumental in the development of Maputo National Park, a spectacular combination of terrestrial and coastal wilderness within the Great Lubombo

Figure 1. An African elephant, a member of one of numerous species of animal reintroduced to core anchor parks by Peace Parks Foundation.

TFCA, that has been rewilded with 5,000 animals, which have flourished to around 13,000 animals and allowed for the reintroduction of cheetahs in 2021.

Meanwhile, in southern Zambia, Peace Parks worked closely with the local Sesheke and Sekhute Chiefdoms to establish the Simalaha Community Conservancy, a pioneering conservation area where an initial 22,000 ha sanctuary recently had to be enlarged to 50,000 ha as the more than 2,000 reintroduced animals from eleven species (including giraffe, sable, roan antelope, eland, puku, hartebeest and waterbuck) increased to over 3,500 through natural proliferation. Communities have proudly taken ownership of the sanctuary and are starting to benefit from sustainable revenue streams through tourism and wildlife management.

This is arguably the key to Peace Parks' success in rewilding: in order to restore wilderness areas, local communities need to reap the benefits of conserving natural resources. This is why the Foundation's conservation work goes hand-in-hand with a wide array of community development projects across southern Africa, benefitting tens of thousands of people, along with the creation of sustainable employment opportunities through the development of wildlife tourism products.

Peace Parks' efforts are more relevant than ever before, in this, the United Nations Decade of Ecosystem Restoration. The UN and its member countries have recognized that reversing the degradation of ecosystems is crucial "to end poverty, combat climate change and prevent mass extinction" and that "without reviving ecosystems, we cannot achieve the Sustainable Development Goals or the Paris Climate Agreement" (https://is.gd/j1UbWT).

To meet the 1.5°C global climate target it is not enough to turn to renewable energy, halt deforestation and convert land – we also need the help of a range of wild animal species to facilitate the capture of excess carbon dioxide already in the atmosphere. Research (led by the Global Rewilding Alliance, of which Peace Parks is a member) is now showing that restoring wildlife populations to significant, near historic levels, has the potential to 'supercharge' climate mitigation. For example, the rebound of wildebeest populations in the Serengeti has rejuvenated grasslands to capture carbon up to the equivalent of the total annual CO_2 emissions of both Kenya and Tanzania, while almost completely eliminating wildfire outbreaks (Global Rewilding Alliance, 2021). This is just one of many case studies worldwide which have shown that ecological restoration, when carefully planned and implemented, can be the single most important factor in mitigating climate change.

Peace Parks is investing in our planet at a scale and tempo that races to get ahead of climate change and biodiversity loss. If the Peace Parks model of restoring and reconnecting wild spaces is replicated across Africa, and indeed on a global scale, then the world has the potential to secure a future for nature, and consequently, humankind.

References

Global Rewilding Alliance (2021) Animate the carbon cycle: Supercharging ecosystem carbon sinks to meet the 1.5°C target. Available at https://is.gd/piVVP2 (accessed June 2022).

Saving Puttenahalli Lake (Bengaluru, India)

Usha Rajagopalan

Usha is a writer and conservationist based in Bengaluru, India.

Keywords: biodiversity; conservation; ecological restoration; water
Citation: Rajagopalan U (2023) Saving Puttenahalli Lake (Bengaluru, India). *The Ecological Citizen* **6**(1): 32–40.

The city of Bengaluru is located on the Deccan Plateau in southern India at an elevation of over 900 metres above sea level. This makes for temperate weather and two spells of rain: the South West monsoon from June to September, and the shorter North East monsoon in November and December. In order to harvest and conserve this monsoonal rainfall, early rulers of the region dammed the natural valley system and built reservoirs. The founder of the city, Kempe Gowda, is then said to have built more reservoirs. In the late 1800s, the British army interconnected them in a cascading system of stormwater drains called *Raja kaluve*. Overflow from one filled the next and Bengaluru came to be known as the 'City of a thousand lakes' (Balasubramanian, 2011: 22).

The salubrious climate, profusion of trees and gardens and copious availability of water made the city an attractive place in which to live. The British set up their cantonment in 'Bangalore' in 1809; a number of prestigious educational institutions and public sector industries were established; then the IT services export boom of the 1980s led the city to become known as the 'Silicon Valley of India'.

The ownership, management and use of the city's water reservoirs also changed over time. Early rulers had assigned the task of protecting and regulating the distribution of water to certain families in the local community. When the reservoirs passed into public ownership, the hereditary *neeruganti* were replaced with government administrators. With livelihood options changing, the reservoirs began to be neglected and misused. Consequently, when the demand on land increased, it became easier to build upon what were once life-supporting bodies of water. Hundreds of lakes were drained and built over with bus terminals, stadiums, shopping malls and residential housing.

The destruction of Bengaluru's lakes prompted environmentalists and other concerned citizens to approach the court and obtain landmark judgements such as a ban on the privatization of lakes (Nagendra, 2016: 181). However, because of political interference, bureaucratic apathy and public misuse, the

lakes continued to suffer – much like the one in my new neighbourhood. Puttenahalli Lake had pools of sewage, mounds of construction debris, burning trash piles and unapproved housing on the embankment which was steadily usurping more land.

Saving the lake

As a young mother, I had given up a professional career to look after my children and pursue my passion for creative writing. While I read newspaper reports about vanishing forests, drying rivers and worsening droughts, I hadn't spent much time worrying about them. Now the sight of the dying Puttenahalli Lake filled me with deep remorse. When we were young, my father, a forest official, had tried to inculcate a respect for environment and natural resources in me and my siblings. *Anna*, as we had called him, had died a few months before we shifted to Bengaluru. I felt that by watching the lake vanish before my eyes, I was letting him down; that I would be as responsible for its demise as the government to which it belonged.

Guilt is a heavy burden, and in 2008 I began a public campaign to get the municipality, the Bruhat Bengaluru Mahanagara Palike (BBMP), to rehabilitate the lake. However, many people felt that those in power would not listen to the voice of the public. Nevertheless, together with three friends, I persisted in lobbying elected representatives and government officials. Finally, frustrated by their unrealized promises, I appealed to a neighbour, a senior city planner, who used his clout with the bureaucracy to push BBMP to rejuvenate the lake. In response to our campaign, the municipality desilted the basin, raised the embankment, fixed inlet pipes and constructed a wetland and a waste weir.

The sight of the heavy vehicles and tippers at work created a buzz in the locality, and we held an Earth Day event in my apartment complex in April 2010 at which we publicized the revival of Puttenahalli Lake. In order to ensure the ongoing health of the lake, in June 2010 I co-founded a non-profit trust, the Puttenahalli Neighbourhood Lake Improvement Trust. Our intention was to assist BBMP with the lake's maintenance but, in a path-breaking move, they made us official custodians. We grabbed the opportunity and set out to make residents in the area assume responsibility for their neighbourhood lake (Puttenahalli Neighbourhood Lake Improvement Trust, 2018).

Almost everybody loves to plant trees; so, together with the BBMP, we organized a plantation drive to which we invited local residents. With the donations we collected that day, we hired a gardener. We continue this practice of meeting maintenance expenses with donations received from individual well-wishers – a dependency that encourages us to be inclusive and people-centric. Along with sharing our excitement at the sighting of a new bird or a tree bursting into flower, despite our tight budget we also organize environment-related and cultural programmes throughout the year.

Given our good working relationship with the municipal engineers, we could request them to install an aerator fountain or erect a pergola to support climbers. However, the government paperwork is so time-consuming that we prefer to seek small corporate grants and execute such projects ourselves. This

makes BBMP more open to undertaking larger-scale infrastructural work at our request – such as harvesting surface runoff from new sources or modifying the existing constructed wetland according to our design. Photos of the lake in 2009 (pre-restoration) and 2022 are shown in Figure 1.

In mid-2015, we began to augment the lake's natural inflow with treated water from the sewage treatment plant at my apartment complex. Getting the requisite permission took over a year of constant follow-up with the BBMP and the Karnataka State Pollution Control Board who feared surreptitious discharge of raw sewage to the lake. We convinced the officials and the apartment owners' association to assume joint responsibility with us for the water quality. In order to purify the treated water further, we installed an aerator fountain, and introduced bio-filter plants in floating platforms. The Karnataka Forest Department has replicated this model in other lakes (Bangalore Mirror Bureau, 2019).

Extensive media coverage now leads people from across India to seek our advice on lake restoration (Scroll.in, 2018). Bengaluru today has more than 50 lake groups inspired directly or indirectly by Puttenahalli, which BBMP calls an "iconic lake" (Lakes Department, 2020).

Figure 1. The lake pre-restoration, in 2009 (top; photo by Usha Rajagopalan), and post-restoration, in 2022 (bottom; photo by R Gopalakrishnan).

A living lake

Puttenahalli Lake is home to many species of water and land birds, butterflies and other insects, and reptiles (iNaturalist, 2022). So much so, we are quite often asked by visitors if we had released them. We didn't have to. The newly rejuvenated lake – which had looked like a football ground – became a marsh after the first monsoon, with a profusion of Bulrush (*Typha latifolia*), Alligator Weed (*Alternanthera philoxeroides*) and Dense Flower Knotweed (*Polygonum glabrum*). The birds loved them.

Some of the bird species sighted at the lake are Indian Pond Heron (*Ardeola grayii*; Figure 2), Purple Heron (*Ardea purpurea*), Little Egret (*Egretta garzetta*; Figure 2), Painted Stork (*Mycteria leucocephala*; Figure 2), Pied Kingfisher (Figure 3), Grey-headed Swamphen (*Porphyrio poliocephalus*), Eurasian Coot (*Fulica atra*), Little Grebe (*Tachybaptus ruficollis*), Common Moorhen (*Gallinula chloropus*), Oriental Darter (*Anhinga melanogaster*; Figure 4), Cormorant (*Phalacrocorax carbo*) and Pheasant-tailed and Bronze-winged Jacanas (*Metopidius indicus*). At ten acres, the lake is too small for bigger birds. Nevertheless, a pair of Spot-billed Pelicans (*Pelecanus philippensis*) come occasionally.

Very recently, the Indian Spot-billed Duck (*Anas poecilorhyncha*; Figure 5) and the Brahminy Kite (*Haliastur indus*; Figure 6) nested at the lake for the first time. The lone kite chick has learned to fly high up the tree on the island out of public sight while a half-dozen or more ducklings follow the parents in a line, much to the delight of the visitors. Unlike the ducklings, the chicks of the White-breasted Waterhen (*Amaurornis phoenicurus*; Figure 7) have shown a tendency to wander on land. They were fortunate that the lake was closed for visitors last year due to the pandemic.

We purchased butterfly-attracting plants from nurseries but found that the insects were equally drawn to a 'weed', *Heliotropium indicum*, which was growing in a small patch at the edge of the lake. We collected the seedlings and

Figure 2. An Indian Pond Heron (left), a Little Egret (middle) and a Painted Stork (right; photo by Prakash Ananthapur).

Figure 3. A Pied Kingfisher (photo by Prakash Ananthapur).

Figure 4. An Oriental Darter with a fish (photo by Prakash Ananthapur).

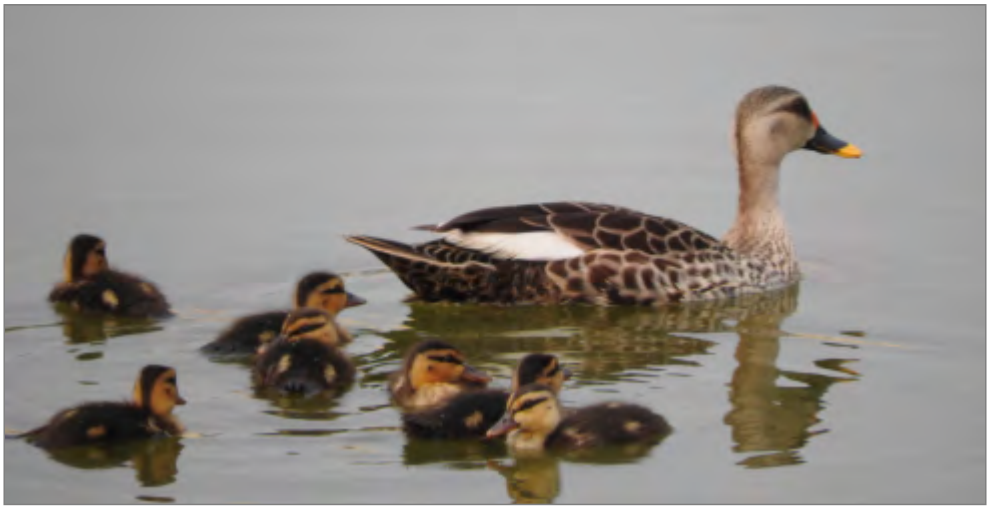


Figure 5. Spot-billed Ducks (photo by Muktha Baliga).

Figure 6. A Brahminy Kite (photo by Kamal Hari Menon).

Figure 7. A White-breasted Waterhen (photo by Prakash Ananthapur).

planted them in other places. The last two years have seen swarms of Blue Tigers (Figure 8) and Crow Butterflies especially during their pre- and post-monsoon migration between the eastern and western *ghats*. Bengaluru, providentially, is in their path (Deepika, 2020). There have also been reptiles sighted around the lake, including Indian Star Tortoises (Figure 9) and Checkered Keelbacks (Figure 10).

Figure 8. Blue Tigers on *Heliotropium indicum* (photo by Aditi Mahesh).

Figure 9. An Indian Star Tortoise (photo by Srinath Kaluve).

Figure 10. A Checkered Keelback (photo by Madhurima Das).

Overcoming challenges

Commercial fishing was an unexpected threat which arose after we filled the lake with treated water. The Fisheries Department found the quality to be excellent and auctioned rights to fishing on the lake from November 2015. We discovered this only after we had cleared the water of invasive weeds and the fishermen came by to introduce Rohu, Catla and Snakehead Murrel. The size of the fish and the constant presence of the fishermen impacted bird life. We requested the Fisheries Department to exempt not only Puttenahalli Lake from commercial fishing but also other small lakes so that they may be nurtured as avian habitats and biodiversity conservation centres. In May 2022, after support from the Forestry Department, our exemption was approved, and the fishing contract was not renewed after it expired at the end of June 2022.

Sewage influx and encroachment are the biggest threats especially for urban lakes. At Puttenahalli, these are interlinked. With the area around Puttenahalli Lake developing, the underground drainage in the adjacent residential layout could no longer handle the additional load and untreated sewage began entering the lake (Dayanand and Swathi, 2019). We have been engaged in a long and difficult struggle with the municipal bureaucracies to have this situation rectified – a struggle which we have now escalated to the courts. A favourable verdict will protect the lake. Otherwise, we will continue our fight to achieve this goal. With so many individuals and groups following us closely, the court direction and our action will surely reflect on the citizen-led lake conservation movement in Bengaluru.

Acknowledgements

The author would like to thank her fellow trustees for their assistance with the lake project: Arathi Manay, OP Ramaswamy, Nupur Jain, Sangita Agrawal, Nandhini Sriraaman and Divya Shetty.

References

Balasubramanian V (2011) *Task Force for Recovery of Public Land and Its Protection: Greed and connivance*. Chairman's Report. Available at https://is.gd/3cA9Yh (accessed June 2022).

Bangalore Mirror Bureau (2019) Islands of 'hope' at Madiwala Lake. *Bangalore Mirror*, 23 March.

Dayanand N and Swathi K (2019) Sewage threatens 'model' Puttenahalli lake. *The Hindu*, 20 July. Available at https://is.gd/E3Orbi (accessed June 2022).

Deepika KC (2020) Butterflies swarm Bengaluru's green spots. *The Hindu*, 24 May. Available at https://is.gd/1Ddn14 (accessed June 2022).

iNaturalist (2022) Puttenahalli Lake. Available at https://is.gd/3Q41Rg (accessed June 2022).

Lakes Department (2020) Puttenahalli Lake. Available at https://is.gd/hJYK2d (accessed June 2022).

Nagendra H (2016) *Nature in the City: Bengaluru in the past, present and future*. Oxford University Press, New Delhi. India.

Puttenahalli Neighbourhood Lake Improvement Trust (2018) The Revival of Puttenahalli Lake.

Scroll.in (2018) Eco India: Bengaluru is witnessing a transformation, one lake at a time. Available at https://is.gd/Oc2ivt (accessed June 2022).

The Albatross Highline NYC and the Albatross Highline (detail; 2018)
Margaret Craig

From the artist: "I have been working on an ongoing print installation sculpture and performance series titled *The Great Trash Reef* since 2015. Its latest incarnation is the *Creature from the Bleached Lagoon*, which references Japanese Kaiju movies and B movie monster flicks. Another is a *Bleached Reef* installation. I have also made pieces that combine printmaking and trash in smaller, wall-bound, framed works. The *Albatross* is a performance peace where I confront people with a life-sized plastic albatross around my neck, referencing the Coleridge poem, and the trash reef becomes mobile as I carry it behind me like Marley's ghost from Dickens." [Continued on next page.]

A Good Haul (2020)
Margaret Craig

From the artist [continued from previous page]: "Constructed from my own recyclables, plus debris I've collected from the streets and beaches (preventing it from ending up in an ocean or landfill), *The Great Trash Reef* takes recognizable material and transforms it into something incongruously beautiful. In personalising waste in this way, my aim is that viewers engage more directly with our ecological issues, especially the pollution of our oceans and waterways."

Clean with Birds (2020)
Margaret Craig

Higher-quality versions of artwork from this issue:
https://www.ecologicalcitizen.net/artworks.php?v=6&n=1

New Lands Grazing (2020)
Margaret Craig

Higher-quality versions of artwork from this issue:
https://www.ecologicalcitizen.net/artworks.php?v=6&n=1

Rewilding: The many-faceted movement that demands a resounding *Yes*

Sophi Veltrop

Sophi serves as outreach manager at Northeast Wilderness Trust in the United States.

As the word "rewilding" catches on in popular culture, the author revisits the concept's original context, land conservation, and connects that to how we may embrace rewilding nature in our own lives and locales. First coined as a conservation approach in the late twentieth century, rewilding has grown into a global phenomenon that spans continents, habitats and cultures. It remains at its core a powerful recipe for healing the Earth. In addition to large-scale passive and active rewilding, individuals and communities have a role to play. The author invites readers to join the movement in whatever way is accessible and meaningful to them.

Keywords: rewilding
Citation: Veltrop S (2023) Rewilding: The many-faceted movement that demands a resounding *Yes*. *The Ecological Citizen* **6**(1): 45–51.

I have identified as an environmentalist ever since I learned the meaning of the word. During the formative years of my life, my environmental activism largely took the form of *No*. *No* to oil, coal, fracking. *No* to plastics, toxic chemicals, pollution. *No* to factory farms, overfishing, deforestation. *No* to extraction, extinction, excess.

While I still stand by those values and try to live them out in the ways I am able, it is nonetheless exhausting to live a life where my personal principles manifest solely as protest and opposition. To be always saying *No* – as righteous as each *No* may be – is to orient one's outlook from the negative. It is to frame a vision for the future in terms of what is *un*desirable, and that vision is simply not compelling enough to be realized, nor is it inspiring enough to give energy and life back to its supporters (Merculieff, 2017). A future of health and wholeness needs more imaginative creativity of what we *do* want. Insofar as constant resistance is draining, constant creative re-imagining is generative, hopeful and life-giving.

I needed something to say *Yes* to. I found it in rewilding.

What is rewilding?

The word 'rewilding' has been catching on like wildfire and, like fire, has a diversity of manifestations. The word has referred to everything from conserving landscape-scale wildlife corridors (Ripple *et al.*, 2022) to replenishing the microbiome of one's skin or gut. Rewilding may be throwing wildflower seed to the wind, going 'forest bathing', or attempting to resurrect extinct megafauna using genomic technology (https://reviverestore.org/).

Given the radically different meanings this term can have, it behooves the user to provide a clear definition. I offer the following:

> *Rewilding is the practice of offering ecosystems the time and space to heal, largely by removing impediments imposed upon them by humans and then relying on nature's innate ability to regenerate itself.*

Rewilding may be practiced both in active, hands-on ways, and through passive, hands-off methods. It may occur at a small or large geographic scale. Regardless of how it is practiced, the underlying philosophy embraces nature's resilience, agency and freedom. It honours the myriad, wondrous, complex life forms with whom we humans share this planet. The promise of rewilding doesn't just apply to some far-off wilderness 'out there' – it invites people to reignite a deep and abiding love for the more-than-human world. It invites us to consider ourselves as one of many miraculous beings, and to re-orient towards being part of nature rather than dominant over it.

The term *rewilding* was originally coined by Dave Foreman in the *Wild Earth* journal, and has been embraced as a conservation tactic ever since. Three key ingredients to rewilding are now widely agreed upon: Cores, Corridors, and Carnivores (Noss and Soulé, 1998). Core habitat is wild habitat in the centre of a larger natural area – it has the least amount of disturbance or human presence, allowing species that require such conditions to still find a home. Corridors are the wild highways that connect large core areas of habitat to one another, so that species may move between them. We most often think of wide-ranging mammals using these corridors, but that's not all. Plants and fungi may shift their ranges on a slower time scale than we may be able to notice, and amphibians and reptiles rely on micro-corridors for annual migrations between upland and wetland habitats. Corridors are important at many spatial and temporal scales. Finally, carnivores and keystone species shape ecosystems in pivotal and irreplicable ways. A forest without cougars or wolves, or a coral reef without hawksbill sea turtles or sharks, may look fine to the casual human passerby, but the family of characters is missing a crucial member. As a result, the relationships between the remaining family members, and the balance of the ecosystem at a macro level, are not the same in the shadow of that loss.

Rewilding is not, however, *rewinding*. Connecting ecosystems and giving them time and space to flourish on their own sets the stage for nature to continue forward. This movement rejects the false characterization of wild places as 'pristine, untouched, grandiose' and asserts that any place, even

those heavily impacted by people or without scenic views, may have an abundant, verdant and biodiverse future. Nor is rewilding about protecting the last remnant of a single species, as important as that may be. It's about holistic, systems-level recovery and healing. In sum, rewilding sets nature free, as it is, to adapt and evolve in response to whatever comes along.

Rewilding the land through conservation: Active rewilding

Active rewilding looks many ways, all involving hands-on work to restore natural processes such as food webs, hydrologic systems, predator–prey interactions and wildlife movement patterns. A non-profit, government agency or citizen-led initiative might remove infrastructure that disrupts these processes: dams, dysfunctional culverts, rubbish dumps, toxic waste, barbed-wire fencing. They might install fish-ladders around dams that must stay in place to allow fish to carry on their natural spawning cycles. Or they might install wildlife crossing infrastructure under or above highways so that animals of all sizes – from toadlets to moose – can find safe passage. These actions have clear and measurable benefits to people too: stabilizing fish populations can lead to higher food security and enjoyment of activities like fishing and bird-watching, and functional wildlife crossings result in fewer dangerous collisions on the road.

Active rewilding also includes the re-introduction of native species to their home ranges – especially those who play an outsized role in the function and health of that ecosystem (*i.e.* keystone species, ecosystem engineers, grazers and carnivores).

Organizations are taking never-before-seen action on behalf of restoring ecosystems in an active way, and then letting nature take up the reins. For example, a brand-new proposal seeks to restore wolves and beavers to federal lands in the United States (Ripple *et al.*, 2022). In Chile and Argentina, jaguars, red-and-green macaws and giant otters are being rematriated to their ancestral homelands (https://www.tompkinsconservation.org/). In Mexico, the tiny axolotl's limited range is attracting the attention of rewilders (Cenisio, 2022). From China (Zhao *et al.*, 2020) to Scotland (https://www.seawilding.org/), Australia (Australian Institute of Marine Science, 2022) to Zimbabwe (https://greatplainsfoundation.com/), restoring lost species to their natural homes is gaining traction – and it is needed now more than ever before.

Rewilding the land through conservation: Passive rewilding

The organization that I work for, which is called Northeast Wilderness Trust (https://newildernesstrust.org/), is one of the few practitioners of large-scale passive rewilding in the eastern United States. It operates in a region where less than four per cent of the land is protected in a wild state, and a mere fraction of one per cent is old-growth forest. In this context, passive rewilding holds immense promise to sow the seeds of tomorrow's ancient forests.

Passive rewilding means placing permanent, legally enforceable wilderness protections on a landscape, and then stepping back and letting nature heal herself. Passively rewilding places like those the Wilderness Trust protects are

often defined by what they are *not*. The forests are not logged, mined, plowed, developed or driven upon. This is all true and important, but the forests are so much more than that. Join me on a tour of a passively rewilding forest to see what it *is* ... what these lands are saying *Yes* to.

When Northeast Wilderness Trust acquires a Preserve or Sanctuary, or establishes a new forever-wild easement (legal protection) on land owned by another entity, we make a promise to the future. We promise that nature, rather than people, will get to direct what the forest looks like and how it behaves. And then time gets to work its magic.

Trees perform their photosynthetic alchemy, packing on new layers of carbon each summer. Wind, snow, rain and hail knock branches onto the ground, building up coarse woody debris that shelters important micro-habitats and gives richness back to the soil. Fungi feed on this richness, and mycorrhizal networks grow and complexify, amplifying communication and resource-sharing within the forest (Simard, 2021). Decade after decade, the soil builds and begins to look more like that of an old forest. With fallen trees and rich soil, mossy and leafy hummocks create variation in the forest floor. Dead trees live out second lives (Rankin, 2015). Standing hollow trees shelter bats, birds and small mammals, and the ones who have been able to live a long, full life are big enough even to house a family of bears, martens or bobcats. Downed ones sport thick coats of moss and house nurseries for new trees beginning their own journeys. Natural disturbances – storms, floods, droughts, insect outbreaks – create openings where younger forests regenerate naturally, adding diversity of age to the tree population. And unnatural ones, like anthropogenic climate change, will also shape the forests 'naturally' over time.

Passive rewilding may sound like an easier, *laissez-faire* version of rewilding, but that is not necessarily the case. An immense amount of time and work is required to legally protect wildlands. And once they're protected, the work doesn't stop there. True, the Wilderness Trust takes a backseat and lets nature run the show on each Preserve. But it requires boots-on-the-ground and positive relationships with neighbours and the local community to ensure nature is allowed to take her course and that encroachments – cutting trees, building trails, motor vehicle trespass – do not occur or are quickly rectified if they do.

Rewilding the land through grassroots and community action

You do not need to work for a conservation organization to be part of the rewilding movement. Rewilding can be practiced in your neighbourhood, schoolyard, community park or local forest. This may look like seeding a pollinator meadow to replace a lawn, or establishing a rain garden to replace concrete. It may look like building bat boxes to hang outside, recognizing that bats who are in decline have few old, shaggy trees in which to roost. It may be adjusting outdoor lighting in your house or town so that nocturnal insects may make their way by moon and starlight as they have done for millions of years. It may be taking down the birdfeeder if bears live near you, it may be putting a

bird collar on your outdoor cat. All of these actions are rooted in an awareness of, and care for, the wild beings around us.

All of the examples above may be scaled up to make an impact at the level of a community, region or continent, as in the case of the Homegrown National Park (https://homegrownnationalpark.org/), Quiet Parks International (https://www.quietparks.org/), or the Dark Sky Project (https://www.darksky.org/). All of these actions not only heal nature, but also offer healing to people both physically and spiritually.

Passive rewilding is also accessible at a smaller scale. We might decide to leave that pile of brush in our yard or community garden, giving shelter to insects and other small creatures. We might join the planning body for a local park or forest and advocate for a section of it to be set aside to grow old and wild. We might get involved with urban forestry efforts to ensure all neighbourhoods equitably enjoy the benefits of city trees. We might advocate that pesticides not be used on public green spaces, or that our town or city adopt No-Mow May (https://beecityusa.org/no-mow-may). There are ways small and large that people from all identities and walks of life can get involved in the rewilding movement ... and it wouldn't be complete without a look inward.

Rewilding ourselves

Rewilding the land is even more powerful when accompanied by an equivalent journey of human culture and values. How do we welcome the wild into our own lives? Can we learn lessons from rewilding the land and lean into messiness, curiosity, interdependence, freedom, letting go of control over others? Ultimately, rewilding ourselves means rekindling humanity's lost familial and reciprocal relationship with nature. It is essential to acknowledge here that access to nature is unequally and unjustly distributed – whether it is enjoyment of National Parks (Hamilton, 2020) or the number of trees on a city block (Cusick, 2021) – and this inequitable distribution is rooted in systemic oppression that continues to this day. An important ingredient to this work is ensuring everyone, regardless of identity, can experience nature and nurture a relationship with the other-than-human world if they so choose. Healing the Earth and healing human communities are intertwined efforts, yet oft not treated as such.

Redefining our relationship with nature does not require one to be surrounded by wilderness or constantly immersed in wild nature. Here are some prompts to spark your own imagination and curiosity in nurturing your personal relationship with nature, whether you're in an urban, suburban, rural *or* wild environment.

- **Go outside**. Try using all of your senses to experience the land. Do you notice something new or feel something different when you do this? Turn it into a game or a meditation. (Only use your sense of taste if you know what you are doing or are accompanied by a wild foods expert.) Take off your shoes, lie on the ground, walk in the rain, climb a tree, sit by the water. Experience or witness the parts of nature that may be uncomfortable or less

desirable (biting or stinging insects, inclement weather, thick and thorny brambles, carnivores). Even if they're unpleasant to you, recognize their sovereign right to exist.

- **Get to know your wild neighbours**. You don't have to be an expert – start with just one plant, bird, mushroom or insect at a time. Is there one you keep seeing whose name you don't know? Use an app like iNaturalist, Seek, or Merlin to find out, or consult a field guide or your local nature centre. Try out a wildlife tracking class or start a nature journal.
- **Learn new things, and share your curiosity and discoveries with others**. Check out, for example, Northeast Wilderness Trust's library of wilderness resources (https://newildernesstrust.org/about/#library) for recommended books, essays and research. Can you bring revelry and delight for nature's wonders, or something new you learned about the wild beings around you, into conversations with family and friends?
- **Mark the seasons**. For example, celebrate spring's arrival by picking up litter before plants obscure the sides of roads and streams, or helping amphibians cross the road on their way to vernal pools on the first rainy night of spring.
- **Become a citizen scientist**. There are plenty of free and low-commitment ways to help ecologists gather data about reptiles and amphibians, butterflies (https://www.e-butterfly.org/), birds (https://ebird.org/home), and more. For example, at Northeast Wilderness Trust's Ambassador Preserves, you can snap a picture at our Rewilding Photopoints (https://www.chronolog.io/project/NWT) to participate in long-term monitoring of a rewilding ecosystem. Far from a dull, regimented homework assignment, each of these initiatives are experiential, first-hand adventures and are great ways to get children and teenagers hooked on wild nature.
- **Get involved**. Find a rewilding organization or project near you and learn about their work, volunteer or become a member. Search the Global Rewilding Alliance (https://explorer.land/p/organization/gra/) or Restor (https://restor.eco/), or scroll through the Nature Needs Half network of allied organizations (https://natureneedshalf.org/who-we-are/members/).

Dreaming a wilder world into existence

Together, rewilding the land and rewilding ourselves work hand-in-hand to offer a hopeful, realistic path forward in the face of climate change and biodiversity loss. These pursuits are lifelong journeys, and the more people who join in, the more we can accomplish. The rewilding movement needs as many friends and allies as there are people.

I recognize that the work (and play) of rewilding myself will be a lifelong adventure. And that there are many ways for us all to participate. It is a calling I have only just begun to answer. Perhaps, fifty years from now, I will still be beginning, again and again. What I know for certain is that I'll still be saying *Yes*.

References

Australian Institute of Marine Science (2022) Spawn, grow, sow: How coral seeding could boost recovery. Available at https://is.gd/9uzK3q (accessed August 2022).

Cenisio R (2022) Rewilding the Axolotl. Atmos. Available at https://is.gd/IlZ9LG (accessed August 2022).

Cusick D (2021) Trees are missing in low-income neighborhoods. *Scientific American*, 22 June. Available at https://is.gd/ERakJK (accessed August 2022).

Di Marco M, Ferrier S, Harwood TD *et al.* (2019) Wilderness areas halve the extinction risk of terrestrial biodiversity. *Nature* **573**: 582–5.

Hamilton KA (2020) National parks are travel's next frontier in the movement for racial equality. *Washington Post*, 17 September. Available at https://is.gd/yg8vyW (accessed August 2022).

Merculieff I (2017) Out of the head, into the heart: the way of the human being. Center for Humans and Nature. Available at https://is.gd/EUqaD9 (accessed August 2022).

Noss R and Soulé M (1998) Rewilding and biodiversity: Complementary goals for continental conservation. *Wild Earth* **8**: 18–28.

Rankin J (2015) Nothing rotten about dead wood. The Outside Story. Available at https://is.gd/QFFcOL (accessed August 2022).

Ripple WJ, Wolf C, Phillips MK *et al.* (2022) Rewilding the American West. *BioScience* **72**: 931–5.

Simard S (2021) Finding the Mother Tree: Discovering the wisdom of the forest. Knopf Doubleday, New York, NY, USA.

Zhao X, Xu T, Ellis J *et al.* (2020) Rewilding the wildlife in Sangjiangyuan National Park, Qinghai-Tibetan Plateau. *Ecosystem Health and Sustainability* **6**: 1776643.

Living in truth in a time of ecological 'emergency' and emergence: Vaclav Havel as eco-guru

Rupert Read

Rupert Read is a professor of philosophy at the University of East Anglia. He is a former Chair of Green House think tank, and a former Green Party of England and Wales spokesperson, councillor and parliamentary candidate. He is co-founder of the Greens Climate Activist Network and Co-Director of the Moderate Flank Incubator. His latest book is *Why Climate Breakdown Matters* (Bloomsbury, 2022).

This article argues that Vaclav Havel's critique of technophilia has a lot to teach us about our collective response to the climate and ecological more-than-emergency. Havel highlights how consumer society endlessly tempts us to live within the lie that 'everything is going to be okay'. His critique helps reveal the illusions that we need to shed in order to live in truth today. These illusions currently bind together too many 'greens' with the so-called 'progressive' element of the ruling class. Instead, the article argues that if we are being honest with ourselves, then the only way we can avoid collapse is by creating an ecological civilization by way of transformative adaptation.

Keywords: societal change; techno-fixes
Citation: Read R (2023) Living in truth in a time of ecological 'emergency' and emergence: Vaclav Havel as eco-guru. *The Ecological Citizen* 6(1): 52–9.

In the profound grip of the ecological crisis, it is easy to feel stuck: in the newness of it, in aloneness with it, in the implacable extremity of it. In that condition, we need thought-allies. Figures – gurus even – who help us to understand that what is happening is not quite as unprecedented as we thought. They make us feel less alone and help us find a way *through* that extremity, without lapsing into denial. That word, 'through', is actually key. The way we may get through what is coming is through entering more deeply into the reality and horror of it. Through disasters. Through painful emotions. Through facing what we are doing to our animal kin. And so forth. A key ally in this task is someone somewhat surprising.

Vaclav Havel – dissident playwright under communist rule in Czechoslovakia, and unexpected President of Czechia after it – wrote what is probably his most

important work at a time (the late 1970s in Eastern Europe) when acting on the basis of the truth was punishable by imprisonment – not so very different from now, in the West, as governments such as the UK's move to criminalize active dissent. Furthermore, Havel wrote at a time when it seemed impossible to believe that the regimes whose systemic lies he called out could be vulnerable. In his great essay 'The power of the powerless' he charted a way in which those regimes *were* vulnerable: the immense power that comes from telling the truth when the system is *founded* on lies. This is the same power that has lately been accessed by Extinction Rebellion and the youth climate strikers, and which now fuels the emergence of a broader moderate flank in eco-action.

A beautiful precedent

In his essay, Havel sets out powerfully how, while some bear much more responsibility than others for crisis, we are all perpetrators and all victims, to some degree. It is no good outsourcing all the blame to government leaders and politicians (or, in our case today, to corporations). They are trapped in the system of the lie: in our case, the lie that things can only get better, the lie that capitalist growthism will find a way, the lie that they (we) 'have this crisis covered'. The system of the lie is something we all share a responsibility for maintaining – or breaking. In our case, so long as nearly all of us nearly all of the time act as if we're not off the cliff, it is impossible to take the kind of action that would be required to get back onto solid ground. We all-so-easily get (almost permanently) caught up in such pretences. We need to work methodically and repeatedly not to do so, and instead, to be *congruent* with the crisis – including, crucially, emotionally so.

It might be thought that it is a bit of stretch to compare Havel's insights into this weakness of Eastern bloc communism with our insights into the weakness of triumphal Western neoliberal capitalism. It might be thought a bit of stretch because Havel was, one might suppose, not concerned with the ecological dimension of the situation, so the precedent he offers is only partially relevant: only relevant to the politics of the situation in a narrow, pre-ecological way.

But this thought can only proceed in ignorance of Havel's actual text. For it turns out that he regarded tech-turbo-charged consumerism and its ecological consequences as absolutely central to what he was seeking to reveal in his great essay. It would be a total misunderstanding to ignore, crucially, the way that that essay culminates not (say) in a denunciation of the Secret Police but in a questioning of *technophilia*, of uncritical techno-optimism: the very attitude that binds together too many 'greens' with the so-called 'progressive' element of the ruling class. This is the very attitude that, above all, needs to be questioned by ecological citizens.

Consider this rich passage from Section XX of Havel's essay, bearing in mind the remarkable fact that it was written fully 45 years ago:

> *The specific nature of post-totalitarian conditions [Havel's way of describing 'late' Eastern bloc communism] – with their absence of a normal political life and the fact that any far-reaching political change is utterly unforeseeable –*

> *has one positive aspect: it compels us to examine our situation in terms of its deeper coherences and to consider our future in the context of global, long-range prospects of the world of which we are a part. The fact that the most intrinsic and fundamental confrontation between human beings and the system takes place at a level incomparably more profound than that of traditional politics would seem, at the same time, to determine as well the direction such considerations will take.*
>
> *Our attention, therefore, inevitably turns to* the most essential matter*: the crisis of contemporary technological society as a whole, the crisis that Heidegger describes as the ineptitude of humanity face to face with the planetary power of technology. Technology – that child of modern science, which in turn is a child of modern metaphysics – is out of humanity's control, has ceased to serve us, has enslaved us and compelled us to participate in the preparation of our own destruction. And humanity can find no way out: we have no idea and no faith, and even less do we have a political conception to help us bring things back under human control. We look on helplessly as that coldly functioning machine we have created inevitably engulfs us, tearing us away from our natural affiliations (for instance, from our habitat in the widest sense of that word, including our habitat in the biosphere) […] This situation has already been described from many different angles and many individuals and social groups have sought, often painfully, to find ways out of it. The only social, or rather political, attempt to do something about it that contains the necessary element of universality (responsibility to and for the whole) is the desperate and, given the turmoil the world is in, fading voice of the ecological movement, and even there the attempt is limited to a particular notion of how to use technology to oppose the dictatorship of technology. (Havel, 1985: §XX; my emphasis.)*

Reading these two paragraphs, the vitality, prescience and contemporary relevance of Havel's thinking is stark. What I have been seeking to do in my recent work (*e.g.* Read, 2022) might be described as accepting at last the failings of the ecological movement to date – failings and limitations he already intuited. I want to tell *that* desperately needed truth, and, on the basis of that truth, to start to chart what it would be for us actually, together, to decide to live eco-logically. Only such truthfulness can facilitate a truly vibrant ecological movement that will actually rise to the challenges of the day. Only then can we start to think beyond the ridiculous assumption that techno-optimism in league with consumerism – the very thing that got us into this mess – can get us out of it.

Resuming with Havel:

> *Various thinkers and movements feel that this as yet unknown way out might be most generally characterized as a broad 'existential' revolution: I share this view, and I also share the opinion that a solution cannot be sought in some technological sleight of hand, that is, in some external proposal for change, or in a revolution that is […] merely social, merely technological, or even merely*

> *political. These are all areas where the consequences of an existential revolution can and must be felt; but their most intrinsic locus can only be human existence in the profoundest sense of the word. It is only from that basis that it can become a generally ethical – and, of course, ultimately a political – reconstitution of society.*
>
> *What we call the consumer and industrial (or postindustrial) society, and Ortega y Gasset once understood as "the revolt of the masses," as well as the intellectual, moral, political, and social misery in the world today: all of this is perhaps merely an aspect of the deep crisis in which humanity, dragged helplessly along by the automatism of global technological civilization, finds itself. (Havel, 1985: §XX)*

Again, I agree. The civilization we are possessed by is at one and the same time fated to come to an end, *and* seemingly implacable and immovable. We need to move further toward living in truth: about the desperateness of our plight, and thus about the level, the great depth of the response required. Politics is not enough. Activism-as-usual is not enough. What we are dealing with is what Havel called (in Section XVI) "a problem of life itself". The occasion calls for *existential* transformation. All the more so, as we face now a greater threat even than Havel did: literally an existential threat.

And returning one more time to this, "the most essential matter" of his whole essay, here is where Havel brings home the direct relevance of his consideration of the power of the powerless to the West, not just to the East; even, he suggests, perhaps *more* so. And so, quoting once more at length his magnificent words:

> *The post-totalitarian system is only one aspect – a particularly drastic aspect and thus all the more revealing of its real origins – of this general inability of modern humanity to be the master of its own situation. The automatism of the post-totalitarian system is merely an extreme version of the global automatism of technological civilization. The human failure that it mirrors is only one variant of the general failure of modern humanity.*
>
> *This planetary challenge to the position of human beings in the world is, of course, also taking place in the Western world, the only difference being the social and political forms it takes. Heidegger refers expressly to a crisis of democracy. There is no real evidence that Western democracy, that is, democracy of the traditional parliamentary type, can offer solutions that are any more profound.* It may even be said that the more room there is in the Western democracies (compared to our world) for the genuine aims of life, the better the crisis is hidden from people and the more deeply do they become immersed in it.
>
> *It would appear that the traditional parliamentary democracies can offer no fundamental opposition to the automatism of technological civilization and*

> *the industrial-consumer society, for they, too, are being dragged helplessly along by it. People are manipulated in ways that are infinitely more subtle and refined than the brutal methods used in the post-totalitarian societies. But this static complex of rigid, conceptually sloppy, and politically pragmatic mass political parties run by professional apparatuses and releasing the citizen from all forms of concrete and personal responsibility; and those complex focuses of capital accumulation engaged in secret manipulations and expansion; the omnipresent dictatorship of consumption, production, advertising, commerce, consumer culture, and all that flood of information: all of it, so often analyzed and described, can only with great difficulty be imagined as the source of humanity's rediscovery of itself. (Havel, 1985: §XX; my emphasis.)*

This is why the matter that I have been concerned with in this essay – and that many of us have been concerned with in our attempt to start at last to fully tell the truth, in ways that the environmental movement had not done prior to 2018 – is so hard. In the West, in the global North, in actually-existing 'liberal democracies', it is hard for us to believe that we are so thoroughly in thrall, so thoroughly unfree. It is hard for us to believe that we are not living in the truth that we note (rightly) is routinely denied to the inhabitants of (say) Russia. But the obstacle that I have identified as perhaps the greatest of all to facing and living in climate-truth and (more generally) eco-truth, is the very attachment to 'progress', to a 'positive' outcome, to a smooth transition, that is coincident with being captured by the system of thought that rules us. Such is the hegemony of conventional hope – the lie that 'everything is going to be okay'.

Consumer society endlessly tempts us to live within the lie. Havel stated this already in fact in Section VI of his essay; he merely elaborates the insight in the devastating passages from Section XX that I have just quoted. Many of us want it not to be true that we have already failed to keep ourselves safe; and that any prospect that there once was of a smooth transition has long gone. But 'I want' doesn't get. It's time for us to grow up, and to follow the lead that our children, magnificently but tragically, have taken since 2018.

The truth we seek to live

What will it involve, to grow up? What then is the truth that we are seeking to live within? It is, as I've argued previously in *The Ecological Citizen*, that *this* civilization is finished (Read, 2020). The only way we get to come out of this with most of what we love perhaps intact is if we accept this and seek to transform what we have. But this truth is desperately resisted – so desperately that even the desperation is masked, denied.

Please note: my claim is not that civilization *per se* is finished, nor that collapse is certain. My claim is that *this* civilization is finished. The only way we get to avoid collapse now is by creating an ecological civilization by way of *transformative adaptation*, and fast (https://transformative-adaptation.com/). This is (it would seem) very unlikely to happen, but we do not know it is

impossible, and so it must be striven for (though we should also undertake *deep adaptation*, to prepare for what is likelier – see Servigne *et al.*, 2020).

Together, our great power rests not in manipulating others to keep the show of activism-as-usual on the road, to keep one's NGO or whatever afloat with a production-line of new recruits. Our great power rests, rather, in telling the uncomfortable truth that we all of us have failed: yes, including XR and Greta too. XR's magnificent success in 2019 in changing – perhaps permanently – the conversation around climate has not resulted in its demands being actually met, and there is zero chance of those demands being met by 2025 (which is now at time of writing less than 1,000 days away). Only by facing together that we have barely reached first-base on climate and ecology, in terms of facing the epochal crisis together, let alone acting adequately on it, do we have any chance of rising at last to this great test of our time.

Ultimately, perhaps, this may demand the creation of what Havel (in sections XVII and XIX of his essay) called "the parallel polis". Such alternative structures for self-governance will, almost certainly, become increasingly necessary as the failure of the state as we know it to address adequately our ever-increasing vulnerability to climate-mayhem and biodiversity-breakdown becomes starker. This parallel polis – that is just starting to come into view – is not a retreat from the real world; on the contrary, it is precisely a realistic engagement with the changing reality of that world.

The beginning is near

Virtually everyone is still calling for us to 'mitigate' our way to safety: they are pretending that we are not already in the age of consequences, the age when various avenues are already closed off by past failures. The attractions of this are obvious; the alternative is hard. But it exists. There *is* an alternative way of proceeding, even for politicians. Namely, seeking to acknowledge how bad things really are, and using that as a basis for an actual congruent wake-up call. So long as the 'Yes we can' rhetoric predominates, then there is never sufficient momentum or felt-need for mass action on climate and ecology – truly serious action, which would begin with genuine truth-telling.

Are we free to say what we want and need to, to tell that truth? The media is still, on the whole, tightly gate-kept. But mostly there is collective *self*-censorship (including in academia, though it must be said that here things are improving). Still, most people are unwilling to face up to climate reality in the way that for instance the think tank Green House has led on doing (https://www.greenhousethinktank.org/tag/facing-up-to-climate-reality/). There is still lots and lots of nonsense out there along the lines of 'maybe COP27 will save us'. There isn't enough real willingness yet to look at saying something truly different, something ecocentric and realistic. Those of us who try to still sometimes get attacked.

What's the way out? Following Havel, I have suggested that we have to deal with our collective addiction. For we are all addicts (of fossil fuels, of growth, of 'progress'); albeit some of us far less than others. We must address our collective addiction culturally, spiritually, politically, but most of all we must

address it *together*. This may sound ambitious. But remember: a reformed version of the *status quo* looks a pretty bad bet. A lot of the way that big tech is 'doing climate' is not remotely deep-green, nor remotely ecological. Dodgy offsets, for example, are central to it. Mainly, these offsets consist of planting trees. But many of those trees *are going to burn*. Some already have.

I move toward ending this essay therefore with the following questions: How can it be made *easier* for collective addiction to be revealed, and so more thoroughly to transform the system, perhaps quite quickly? How exactly can that be collectively facilitated? How do we best break on through to the other side, and manifest the power of the powerless?

Rather than seeking to answer the question any more than I have already done, I end with an anecdote. I visited Poland in 1987, as part of a group seeking to engage with dissidents there. At the time, Poland had long been under martial law. We were followed and intimidated, we undertook the first video-interview with Lech Walesa since martial law had been declared, and we smuggled it out of the country in an embassy bag.

I had a remarkable experience, there in Gdansk. Encountering citizens protesting even under martial law, singing pro-Solidarity songs, attending politicized church services (the Church being one of the few places where any organizing was still possible), I found myself coming to an extraordinary, seemingly absurd conclusion. Without understanding how it was possible, I became convinced that these people would win. I went back to Britain, and told many people of my conviction. They would typically ask me, "But how? How are they possibly going to win, against an implacable authoritarian regime?" I had no answer. All I knew was that I somehow knew that they were. I somehow knew that their authenticity – the truth that they were still living in the face of the lie of total state control and an unchangeable system; the lie of state-ideology – had itself an implacable power. Slower, but surer.

Two years later, it turned out I was right. In the dark times we are living, we need remembrances like that. We need allies and gurus like Havel. We need to know that what seems impossible can become possible, and then even unavoidable: through telling and living in the truth. Only then can something emerge which will stop us from heading ever deeper into a permanent 'emergency'.[1]

Note

1 I scare quote the term 'emergency' quite deliberately. As I have argued elsewhere, my "contention is that the emergency frame is actually too optimistic. It's a form of denial about the width, depth, and tragic nature of the crisis" (Read and Knorr, 2022).

References

Havel V (1985) The power of the powerless [*Moc bezmocných*, trans. P Wilson]. In: Keane J, ed. *The Power of the Powerless: Citizens against the state in Central-Eastern Europe*. E Sharpe, Armonk, NY, USA.

Read R (2020) This civilization is finished: Time to build an ecological civilization. *The Ecological Citizen* **3**: 157–62.

Read R (2022) The inconvenient truth about telling the truth about climate breakdown. *ABC Religion and Ethics*, 25 February. Available at https://is.gd/liikEH (accessed August 2022).

Read R and Knorr W (2022) This is not an 'emergency' ... it's much more serious than that. *Emerge*, 21 February. Available at https://is.gd/9rKotn (accessed August 2022).

Servigne P, Stevens R, Chappelle G and Rodary D (2020) Deep Adaptation opens up a necessary conversation about the breakdown of civilisation. *Open Democracy*, 3 August. Available at https://is.gd/uNN8gi (accessed August 2022).

Is there moral justification to eat meat?

Gregory F Tague

Gregory is Professor in Interdisciplinary Studies and Arts, St Francis College, Brooklyn, NY, USA. The author of many works, his most recent book is *The Vegan Evolution: Transforming diets and agriculture* (Routledge, 2022).

This article discusses and rejects the anthropocentric claim, proposed by Zangwill (2021), that we have a moral duty to eat meat. It argues that Zangwill ignores both the extensive ecological damage caused by animal agriculture, and the cruelty and suffering that it entails. Using a framework proposed in Marino and Mountain (2021), it then diagnoses Zangwill's argument as proceeding from a broader cultural phenomenon: the human attempt to cope with our existential dread of death, by denying our mammalian nature and depersonalizing other, non-human, animals. Once we reject this human exceptionalism, we will see that our moral duty is not to eat animals but to respect the intrinsic value of their lives.

Keywords: animal ethics; human supremacy; values
Citation: Tague GF (2023) Is there moral justification to eat meat? *The Ecological Citizen* **6**(1): 60–5.

In answering this question, philosopher Nick Zangwill (2021) would say *yes*; bio-psychologist Lori Marino and co-author Michael Mountain (2021) would say *no*. Zangwill argues "that eating meat is morally good and our duty when it is part of a practice that has benefited animals" (2021: 295). Against this injunction, Marino and Mountain demonstrate that the human denial of death motivates us to distance ourselves from other animals so that we justify harms to them – harms which include raising animals as our food.

The final calculation is rather simple. *Contra* Zangwill, humans do not have a duty to eat meat; rather, we have a duty to restore the fitness of the planet we've compromised. This duty can be fulfilled in large part by dramatically shifting away from livestock farming and meat eating, as these practices are intrinsically cruel and a significant source of environmental damage.

Zangwill, the meat-eating animal

In a nutshell, Zangwill's argument is that "eating meat is morally good primarily because it benefits animals" (2021: 295). He argues this from sentientist premises: that animals are sentient beings and that their flourishing is morally valuable. Zangwill points out that if humans did not eat

meat, most domesticated animals would not exist, as farmers would cease to care for or breed them. Thus, he argues, "eating meat is an essential part of a practice whereby valuable conscious lives have been and are being created" (310). Hence, he concludes, in respect to those cases where animals raised for meat have "a significant quality of life" (296) meat-eating is our moral duty. Indeed, "[e]ating meat is an act of kindness" (310).

What should we make of this argument – that the non-human life worth living is one that fills the human belly? The only way Zangwill can reach his conclusion is by ignoring the ecological context within which the practice of meat-eating currently exists. What is more, his argument treats animals as resources for humans and not as ends in themselves.

To begin with, Zangwill explicitly limits his argument to those animals which enjoy "good lives" – and admits that this may not apply to those raised on factory-farms. However, most of the world's meat comes from the latter, so he's creating an illusion. Meat from supposedly happy 'free-ranged' animals is not going to feed the already eight billion human stomachs. The corporate meat industry is driven by the profit-motive, not ethics, and factory-farmed meat is the most profitable.

Furthermore, even if we were to reduce factory-farming and produce more so-called 'free-range' meat, this would require more land devoted to pasture. Already, about one fifth of Earth's biomass is livestock populating lots of land (Machovina *et al.*, 2015), so following Zangwill's reasoning we would have to set aside yet more land as grazing space. Zangwill claims the fate of wild animals is not at issue in his argument, but deforestation in places like the Amazon (Nepstad *et al.*, 2008), to settle livestock or grow feed for them, contributes significantly to biodiversity decline and habitat loss. If the world's population shifted to a plant-based diet, we would significantly reduce land used for agriculture to feed cattle (Ritchie, 2021) – land that could be better utilized for rewilding, carbon sequestration, reforestation and so on.

In addition, while there are many causes of the current environmental crisis, livestock production and cattle ranching are major contributors. Livestock – whether factory farmed or 'free range' – emit lots of greenhouse gases, with animal agriculture responsible for between 16.5 per cent and 28.1 per cent of all emissions (Twine, 2021). This is to say nothing of the silage or other supplements with which they are fattened, which in turn lead to food and water waste. This practice is not a sustainable use of land (Machovina *et al.*, 2015; Springmann *et al.*, 2018; Clark *et al.*, 2020). Overall, while wild animals service the ecosphere, animals farmed as meat for the pleasure of human consumption upset Earth's ecological equilibrium (Theurl *et al.*, 2020).

In any case, the differences between 'factory farming' and 'free range' practices are much smaller than Zangwill would seem to believe. For one thing, as Crary and Gruen (2022) point out, labels like 'free-range', 'grass-fed' *et cetera*, are mostly advertising gimmicks. And even on small farms the animals are treated and destroyed much as they are in a factory slaughterhouse (Crary and Gruen, 2022). Animal farms of all sizes produce meat for profit by rearing livestock who are electrically stunned (sometimes several times) at the point of

death to have their throats slit, and then their corpses are mutilated for butchering and packaging (Gruen and Jones, 2016).

Zangwill argues that domesticated animals exist and flourish only because of the practice of eating meat, and that therefore eating meat is morally good. Would that apply to one's children too? In other words, does his argument not also show that "we should at least sometimes kill and eat enslaved human beings if doing so were part of a practice that has benefitted them" (2021: 303)? To block this *reductio ad absurdum*, Zangwill makes a familiar move: that his argument does not apply to humans, because we are *rational*. Zangwill's authority at this point (2021: 304) is the seventeenth-century French philosopher Descartes, who viewed animals as automatons while performing vivisections in spite of their cries of pain.

Ignoring current developments in the study of animal cognition (*e.g.* Rowlands, 2019; Andrews and Monsó, 2021), Zangwill claims animals are not as cognitively sophisticated as humans and that, therefore, we need not worry about any painful consciousness as they line up to be slaughtered, hear the wails of their fellows, see those before them succumb, and then feel the blade slit their throats or the blast of a gun bolt pierce their skulls. This unabashed anthropocentrism also means that, in assessing the 'quality' of animals' lives, Zangwill does not feel the need to consider the ways in which farmed animals have been deprived of their autonomy (*cf.* Regan, 2004). But we should not follow Zangwill in parcelling out obligations and injuries based on the supposed conscious sophistication of a species – where we measure this using human conceptions of intelligence. This is simply anthropocentrism in another guise.

A diagnosis of Zangwill's argument

Marino and Mountain (2021) argue that humans hurt animals or kill them for food to exert a self-interested sense of exceptionalism. The fraudulent idea of human exceptionalism has led to mass extinctions, ecosystem destruction and climate change spiralling out of control. But no species is exceptional in this way; rather, populations have evolved unique adaptations to survive among others in a mutually-shared ecosystem, locally, and in a larger biome. Contrary to Zangwill, our moral obligation is to work *with* animals, since they are purveyors of clean air and water for a healthy planet.

When Westernized humans are reminded of their mortality, a common response is to deny their animal nature and claim something spiritual. In this way – as we saw above in Zangwill's appeal to Descartes's authority – humans come to regard, and to exploit, other creatures as mere 'things' so as to emphasize an invented human dominance and superiority. But as Darwin pointed out, life is not neatly arranged in a hierarchy according to some notion of the 'great chain of being', but instead exists along a widening plane of descent with modification. For instance, all mammals are connected by a shared limbic system governing our emotions and behaviours.

Drawing on Ernest Becker (1973), Marino and Mountain show how the human anxiety and dread of death is ameliorated when humans deny their

mammalian nature and objectify other animals for their destruction. This is an example of what Becker termed 'Terror Management Theory', which "asserts that much of human behavior is motivated by anxiety, however unconscious, about personal mortality" (Marino and Mountain, 2021: 7). The rampant abuse of livestock, they argue, keeps human bodies at an elevated distance from their own physical mortality as they control the lives, in death, of other non-human beings. We see this death denial in the depersonalization of many animals in factory farming and any form of meat consumption; it is evident in widespread animal hunting and poaching, too. This, they go on to say, is so pervasive because cultures help promote the human-over-animal mentality from childhood – anthropodenial attitudes that are difficult to quash except for ethical vegans and some religions, like Jainism, that practice non-injury to any life form.

Using this framework, we can diagnose Zangwill's argument for the moral goodness of meat-eating as an example of a much broader phenomenon: the neurotic denial of death syndrome. This syndrome allows us, for example, to suspend our disgust at animal slaughter and see their dead bodies simply as 'meat' that is to be sanitized with spices in cooking. In doing this we say: *It's not a life; it's a commodity, a mere instrument for human pleasure.* Indeed, we justify this killing by claiming it brings us life. (Meantime, consider the near-vegan silverback mountain gorilla who is all-powerful from eating leaves!) Terror management theory suggests, as Zangwill's writing evinces, a way to depersonalize other living beings, much as the Nazis did with those they killed, or as trophy hunters do in the display of body parts of their game prey.

What duty do we have to animals?

The analysis above has emphasised that livestock production for meat eating seriously degrades ecosystems and depletes biodiversity. One response to this is to suggest that we should strive to dramatically reduce our meat consumption, but not eliminate it entirely. A good example of this approach is given in Machovina and colleagues (2015). Their recommendations are worth consideration – at least in the short term – for most industrial, and even some developing, societies.

First, they argue, there should be a reduction in the production of livestock meats while simultaneously allocating grains set for feeding cattle to human nutrition. There should be a conversion from meat to soy and legumes for protein. Food waste, particularly in urban centres, should be reduced. They suggest a daily intake of meat at no more than 100 grams per person, with this limit promoted by advertising campaigns. Second, animal products that harm ecosystems, for example cattle ranching and bushmeat hunting, should be replaced with more sustainable proteins. Beef can be replaced by chicken or pork, animals who require a smaller amount of land and emit less harmful gases (Boucher *et al.*, 2012). Another viable replacement would be from in-vitro lab meats. Third, animal agriculture should move away from high-polluting factory farming and become reintegrated into a polyculture that simultaneously grows a variety of plants on lands along with animals, mimicking a real ecosystem.

While certainly not without merit, these recommendations do not address the question posed in the title of this essay. Like Zangwill, they still fundamentally regard non-human animals as means to our ends, to be used as we see fit.

Zangwill's claims might have made sense in the seventeenth century, along with Descartes' false ideas about the feelings and intelligence of non-human creatures or his practices of animal cruelty. Now, any argument promoting meat eating is irrational given what we know about animal sentience and sapience, the ills of meat consumption to human health, the spread of zoonotic diseases, the wastefulness of feed and water on farm animals, and the ruin of ecosystems for animal agriculture. Zangwill's perspective looks to the distant past that must be overcome as we reach to the future.

In contrast, Marino and Mountain (2021) celebrate the abundance of life on Earth and want to preserve it naturally in the wild. Their ideology implies eliminating or substantially reducing animal agriculture. I would thus argue that, as ecological citizens, we have a moral duty to make an informed choice about the origin of our proteins by not eating animal flesh, and, ultimately, rejecting all the products of animal agriculture – in other words, moving towards ethical veganism. Rather than raising animals to be cruelly and wastefully massacred as human food, they should be granted sovereignty of place in their wild habitats. In some locales we should learn to live alongside of them with equality since they ably function as ecosystem engineers sustaining forests, grasslands, wetlands, oceans and even the atmosphere (Donaldson and Kymlicka, 2011; Wilson, 2016; Tague, 2020). Thus, positive change to ensure Earth's future should come from cultural shifts towards ethical attitudes that value ecosystems and animals as ends in themselves.

In sum, our moral duty is not to eat animals but to respect the intrinsic value of their lives.

References

Andrews K and Monsó S (2021) Animal cognition. *Stanford Encyclopedia of Philosophy*. Available at https://plato.stanford.edu/entries/cognition-animal/ (accessed November 2022).

Becker E (1973) *The Denial of Death*. Free Press, New York, NY, USA.

Boucher D, Elias P, Goodman L *et al.* (2012) *Grade A Meat? Solutions for deforestation-free meat*. Union of Concerned Scientists, Cambridge, MA, USA. Available at https://is.gd/HHYbvQ (accessed November 2022).

Clark MA, Domingo NG, Colgan K *et al.* (2020) Global food system emissions could preclude achieving the 1.5° and 2°C climate change targets. *Science* **370**: 705–8.

Crary A and Gruen L (2022) *Animal Crisis: A new critical theory*. Polity Press, Cambridge, UK.

Donaldson S and Kymlicka W (2011) *Zoopolis: A political theory of animal rights*. Oxford University Press, Oxford, UK.

Gruen L and Jones RC (2016) Veganism as an aspiration. In: Bramble B and Fischer B, eds. *The Moral Complexities of Eating Meat*. Oxford University Press, Oxford, UK: 153–71.

Machovina B, Feeley KJ and Ripple WJ (2015) Biodiversity conservation: The key is reducing meat consumption. *Science of the Total Environment* **536**: 419–31.

Marino L and Mountain M (2021) 'I am *not* an Animal!': Denial of death and the relationship between humans and other animals. The Kimmela Center. Available at https://is.gd/hCgfTF (accessed November 2022).

Nepstad DC, Stickler CM, Soares-Filho B and Merry F (2008) Interactions among Amazon land use, forests and climate: Prospects for a near-term forest tipping point. *Philosophical Transactions of the Royal Society B* **363**: 1737–46.

Regan T (2004) *The Case for Animal Rights*. University of California Press, Berkeley, CA, USA.

Ritchie H (2021) If the world adopted a plant-based diet we would reduce global agricultural land use from 4 to 1 billion hectares. Our World in Data, University of Oxford. Available at https://ourworldindata.org/land-use-diets (accessed November 2022).

Rowlands M (2019) *Can Animals Be Persons?* Oxford University Press, Oxford, UK.

Springmann M, Clark M, Mason-D'Croz D *et al.* (2018) Options for keeping the food system within environmental limits. *Nature* **562**: 519–25.

Tague GF (2020) *An Ape Ethic and the Question of Personhood*. Lexington Books, Lanham, MD, USA.

Theurl MC, Lauk C, Kalt G *et al.* (2020) Food Systems in a zero-deforestation world: Dietary change is more important than intensification for climate targets in 2050. *Science of the Total Environment* **735**: 139353.

Twine R (2021) Emissions from animal agriculture – 16.5% is the new minimum figure. *Sustainability* **13**: 6276.

Wilson EO (2016) *Half-Earth: Our planet's fight for life*. WW Norton, New York, NY, USA.

Zangwill N (2021) Our moral duty to eat meat. *Journal of the American Philosophical Association* **7**: 295–311.

Rewriting civilization for the ecological citizen: How and why storytelling can empower and mobilize sustained ecological actions

Amy Lewis

Amy is the chief policy and communications officer at the WILD Foundation (https://wild.org/).

Humanity confronts ecological challenges at the planetary level requiring the mobilization of leadership and public action on an unprecedented scale. Doing so may require, at the very least, the partial reinvention of civilization. Such a reinvention is, in part, a reimagining of ourselves as ecological citizens – and *storytelling* can help us to achieve that. An examination of the role of storytelling as a civilization-building activity and the science behind effective stories, shows ways of rethinking how the conservation sector should communicate with the broader public.

Keywords: language; storytelling

Citation: Lewis A (2023) Rewriting civilization for the ecological citizen: How and why storytelling can empower and mobilize sustained ecological actions. *The Ecological Citizen* **6**(1): 66–73.

Before Gilgamesh was a man, he was a god-king, alone in his idle thoughts excepting the occasions he left the palace to lie with the city's virgins. Even then, in their tender company, the god-king could not fully escape an elusive and persistent anxiety, which he experienced as an expanding void irretrievably overcoming the very fabric of his being.

One night, Gilgamesh had a vision of a star. What does this mean, he asked the priestess upon waking; the star fell from the sky, and the people wondered at it. I was jealous of it and tried to keep it for myself, but when I tried to lift it I was overcome with exhaustion. I have never failed before. I cannot explain it.

The priestess said: The star is a man who is your friend and equal. He will not forsake you and you will never wish to be apart. He will lift you from your tiredness.

Gilgamesh was quiet for a moment before he spoke: O priestess, I want your words to be true.

It is an old story, the oldest story we know, written in cuneiform on twelve clay tablets, recounting the tale of a god-king named Gilgamesh who loved and lost a friend to death, and learned he lacked the power to bring him back to life. It's about the discovery of what it means to be human, and its most notable feature is that it can still captivate modern audiences four thousand years after its first telling.

For those who study mass mobilization, *The Epic of Gilgamesh* and stories like it raise important questions about how and when individuals organize into improbable groups of thousands and even millions to achieve common objectives that are sometimes at odds with their immediate interests.

The example of *Gilgamesh* points to the deep connections between stories, collective identity and civilization building. Setting aside for a moment materialist explanations of how civilization emerged through a series of largely physical innovations, we find that underlying those discoveries is already a great work of the imagination. There were those who dared to imagine and even propagate the idea that large groups of people numbering in the thousands and tens of thousands, without direct genetic ties, could work together to achieve feats never before accomplished. These leaders forged the first large-scale collective identities that laid the basis for the building of pyramids and other great works of the ancient world. Their vehicle for transmitting common values and behaviours among social leaders and the portions of the public who were not enslaved was very likely *story*.

Is it any wonder, then, that the first story, *The Epic of Gilgamesh*, concerns a friendship between two unrelated men? In large civilizations, kinship cannot be the only reliable force for social cohesion. As Harari writes,

> *Any large-scale human cooperation – whether a modern state, a medieval church, an ancient city or an archaic tribe – is rooted in common myths that exist only in people's collective imagination. [...] There are no gods in the universe, no nations, no money, no human rights, no laws, and no justice outside the common imagination of human beings. (2011: 463, 472)*

For those who embark upon the journey of inventing the ecological citizen, as I do, forging a citizenry that is capable of mobilizing planetary-scale collective action, nothing could be more relevant to our endeavour than a comprehensive understanding of storytelling. In the past, civilization builders provided answers to the question of what it means to be human within the context of their new societies, answers in the form of stories that resonated with ordinary people and persuasively conveyed a code of conduct to which they could aspire. Whether we are conscious of it or not, stories are the basis for collective pursuits and sacrifice; when they are told well, they lay an enduring foundation upon which a society may flourish.

The difference between science communications and story, and why the latter still matters

In 2018, a 15-year-old girl stopped attending school. Camping outside the Swedish parliament instead of attending class, she held a sign that simply read: *Skolstrejk för klimatet* [School strike for climate]. Alone, she protested; a girl in braids, vulnerable and proud – taking action, however seemingly futile, as she knew how and when no one else would. The public responded to her in a way it had not to others more famous and accredited. Within months, Greta Thunberg would be a household name around the world. She became, perhaps, the first relatable global climate emergency protagonist. Her example began an expansion of the climate discourse away from the sole primacy of research to a more inclusive dialogue that made liberal use of stirring examples of personal courage, thus creating a storyline with a more reliable power to mobilize millions.

Science is a method for apprehending relationships within the physical world and testing whether these discoveries hold true across time and space. As such, science has crafted a uniquely rigorous communication style that deliberately avoids emotional manipulation in preference for a cautious and objective discussion of scientific findings. 'What is' is the chief concern of scientific research. In general, scientists speak to a narrow audience of experts held to high standards of rational discourse.

Science communicators have emerged as popular emissaries of science to the general public. They occupy themselves with increasing the public's appreciation for science by translating the uncomfortably formal language of expert hypotheses, theories and discoveries into accessible and entertaining metaphors and terminology. While this can include storytelling, oftentimes it does not because science communication is still a subset of the hyper-rational scientific endeavour. Science communicators avoid the cultivation of emotion (excepting curiosity) while appealing to rationality as they elucidate the 'what is' for a broad audience.

Humans receive years of training to understand the strictures of science, but stories are different. They require no training whatsoever to appreciate because humans are programmed for stories. Stories are a communication style purposely crafted to trigger a wide range of emotional responses, unwittingly leveraging aspects of our primal biology to capture our attention and elicit empathy. While many stories are told merely for the enjoyment of sharing them (storytelling is, after all, a much easier, more intuitive form of communication for both the audience and the communicator), stories are also one of the most powerful tools of persuasion and mass mobilization because they avoid rational discourse altogether, striking straight for the heart instead.

Our brains like storytelling for several reasons. Stories, when properly constructed, leverage the human stress response system, and in so doing rise in importance relative to other information we receive. Humans evolved to focus on phenomena that elevate our adrenaline and cortisol levels. When we are stressed our entire attention is focused on an imminent threat giving us the

best opportunity to successfully respond. Effective storytellers draw upon stressful problems and situations to capture and hold human attention, something they are able to reliably accomplish because of our biology.

Listening to stories also lowers our resistance to persuasion by aiding empathetic responses. This occurs through a process of "neural coupling" (Schmälzle *et al.*, 2015; Stephens *et al.*, 2010) or "mirroring" (Kilner and Lemon, 2013), meaning that the neurons in our brain fire in the same patterns as those of the speaker allowing us to share in the speaker's emotional response to the people and events described. If the storyteller is effective – for example, by incorporating a lot of detail, emotion and relatability – the more we listen (or read), and the deeper we experience what scientists call a "somatic state," meaning that what we are told triggers the same areas of the brain that would activate were we actually to experience the events of the story in real life (Gallo, 2016).

In many ways, the above information answers a frequent lament of environmental scholars, practitioners and activists baffled by public scepticism of science. In fact, polls show that the public is, more often than not and on most issues (including environmental ones), supportive of science influencing policy decisions (Funk 2020), but again and again, this support seems to be too weak to surmount competing narratives.

One example from health policy is the decades long campaign to convince the public to stop smoking. While corporate disinformation played a big role in the public's refusal to act on science, there were also several competing narratives, driven by story, that made the science, however true, irrelevant to the public's immediate interests for social acceptance and life fulfilment. How many teenagers started smoking because it was seen to be 'cool' to do so? What role did fictional figures like the Marlboro Man and Joe Cool Camel have in that perception? It's hard to measure, but it's also hard to argue that the impact of these brand protagonists was zero. The tobacco industry understood well the power of iconic protagonists – they had been successfully advertising with them for years. In fact, the twentieth century's preeminent marketing authority, Edward Bernays, deliberately staged opportunities for storytelling. During the 1929 Easter parade in New York City, the American Tobacco Company, under Bernays' recommendation, organized a group of "genteel and respectable" women to march holding "torches of freedom" – cigarettes. By weaving the public display of this group of women into the larger narrative of women's suffrage and independence, they successfully told a story about the relationship between women, cigarettes and freedom: women who smoked cigarettes were liberated women (Tye, 1999).

No matter how much the science definitively counters narratives like these, it can take decades to overcome the indelible perceptions left by such powerful storytelling.

I am not arguing here that storytelling is *superior* to science communication; each serves different purposes and is necessary for those purposes. Science communication aids understanding of objective reality, storytelling aids empathy and persuasion. One is a tool for empowering more effective actions,

the other a tool for generating the political and collective will to take those actions. My key point is that science alone may not be enough to forge the collective response required to address the climate and biodiversity emergencies, but that the actions science recommends could become more palatable to the general public should ecological leaders effectively bundle them within the exciting and heroic narratives of storytellers.

The structure of an effective story

Every year, environmental activists on the frontlines of biodiversity loss take great personal risks to defend other species. Some of these activists die in the line of duty, many live under long-term threat from the powerful interests (both criminal and legal) that they oppose.

One of these activists is Andre Baume, a park ranger in Virunga National Park, responsible for the care of orphaned mountain gorillas. When asked why he is willing to take such risks, Andre responded: "You must justify why you are on this earth – gorillas justify why I am here, they are my life. So if it is about dying, I will die for the gorillas" (von Einsiedel, 2014).

While reading the paragraphs above, many readers will notice a shift in attention that occurs as the narrative moves away from a general description of the plight of environmental activists to focus on a named individual with first-hand experience of the problems described. Human brains are more active when they encounter fewer subjects; our brains cope with individuals far better than they do with groups (Västfjäll *et al.*, 2014). This may impact how we experience compassion, as research shows that the more who suffer, be it from genocide or environmental disasters, the less humans care (Slovic and Västfjäll, 2015). But if one life alone is at stake, people will often quickly mobilize to protect it.

This paves the way for understanding the first of two indispensable elements of a story: the protagonist possessed of a great desire for something. Due to the way humans experience compassion and empathy, a single protagonist is perhaps the most reliable vehicle for eliciting these emotional responses. While in literature protagonists need not be relatable to spur page-turning devotion to a story (their desire is enough to keep readers engaged – consider some of literature's most infamous anti-heroes: Humbert Humbert in *Lolita*, Lucifer in *Paradise Lost*, or even Walter White in *Breaking Bad*), stories that mobilize collective action require a hero who resonates with the audience in one way or another. Perhaps it is their vulnerability (*e.g.* Greta Thunberg) or their frustration with themselves and the problem they confront (*e.g.* Gilgamesh); whatever it is, something about these heroes must open a gateway to their humanity in a way most people can understand.

The second indispensable element of a story is the obstacle or problem. A protagonist alone is not enough to capture and hold human attention. Our stress response demands, well, stress. The obstacle the protagonist confronts on their journey to achieve their heart's desire is the element that captivates audiences.

The combination of the character in pursuit of an objective and the obstacle in the way of them achieving the outcome drives the plot, the conflict, the theme and the dramatic arc. Whether the story is non-fiction, fiction or truthful fiction, these two elements provide all the structure needed. Journalists know this formula well. When they seek out inspiration for an article, more often than not they look for a 'poster child' who represents in microcosm a larger, more complex situation. Not only are readers then more likely to read the article, they are also more likely to respond to it.

The notion of conflict in a story might challenge those who hold dear to the belief that stories must be 'positive' in order to mobilize action. And, indeed, there is much truth to this statement. Under the best of circumstances, moving an audience to collective action is difficult. But if a storyteller offers them nothing in the way of hope they can transform a group of would-be activists into bitter nihilists. Fortunately, the presence of conflict alone does not determine whether a story is optimistic or pessimistic; rather it is the outcome of the story or the pathway to change that sets the audience's state-of-mind.

Political science has much to say about the types of narratives that result in action. This falls under a broad category of research called "problem definition," the activity undertaken by opposing coalitions to create a dominant understanding of the situation at hand: is it a problem or merely a condition?

A key finding from this body of literature is that conflict most serves those who seek change (Baumgartner and Jones, 1993; Pralle, 2006). Those who wish to maintain the *status quo* fight vigorously to maintain the public's current understanding of a situation which limits audience participation and lowers the likelihood of substantial conflict. They do so by utilizing a few proven methods:

1. sowing confusion by creating the perception of disagreement between scientists or experts;
2. appealing to the audience's sense of inferiority, claiming that this is a matter best left to a select group of highly-trained and credentialed experts;
3. defining the situation as a 'natural' occurrence without any hope of effective human recourse.

Oftentimes, they will categorize a situation as either highly technical or related to national security, frames that almost immediately quell public engagement.

Time and again, we can see these same tactics deployed by powerful interests who oppose environmental policies. Whether it is climate change, the use of nuclear power, extinction, landscape change or a host of other issues, the playbook is the same. Suppress conflict by convincing the audience that there is nothing they can do about a condition even if they tried.

But stories can be used to overcome these tactics. They won't always win. The influence of powerful entrenched interests in politics cannot be underestimated. But they do give David the best chance of overcoming Goliath.

Deborah Stone (1989) researched numerous environmental campaigns, evaluating them on their ability to engage the public in meaningful actions. Her findings reveal that the campaigns that were most successful were those that succeeded in defining a situation as a problem with both a human cause and a human fix. Her research is confirmed by others who compare and control for the multiple variables present in a policy context (interest groups, institutional openness and transparency, public sentiment before the campaign, *etc.*). Repeatedly, scholars find that one of the most important variables in determining the outcome is an environmental coalition's success in defining the problem.

Just as stories can be successfully used by marketers to overcome a scientific consensus, stories that help us to understand the human origins and solutions to problems can also overcome entrenched interests and become the basis for reinventing civilization.

Before I became an ecological citizen, I was a successful professional at what seemed to be the pinnacle of civilization. I travelled the world and enjoyed the fruits of many cultures and regions. But for all this, I was alone in my idle thoughts, seeking diversion and a sense of community where I could find it – on LinkedIn and during fleeting conversations with colleagues. Even then I could not fully escape a persistent sense that I was alone in the world. Most of the time, I successfully managed it, but there were moments, when I was tired or anxious, in which it would ambush me, an insatiable hunger of unknown origin come to devour my sense of purpose and belonging.

One night, I dreamed of a leaf falling from a tree. It glowed like the sun before it touched the ground and I envied its beauty, but when I tried to lift it to carry it with me, I could not. Overcome with exhaustion from my effort, I became frustrated that I could not carry out such a simple thing.

Glumly, I contemplated the leaf when a voice interrupted my brooding.

The leaf is another lifeform, the voice told me, who is your friend and equal. It will not forsake you and you will never wish to be apart. It will lift you from your tiredness.

I was quiet for a moment before answering: Oh, please let these words be true.

References

Baumgartner F and Jones B (1993) *Agendas and Instability in American Politics*. The University of Chicago Press, Chicago, IL, USA.

Funk C (2020) Key finding about Americans' confidence in science and their views on scientists' roles in society. Pew Research Center, 12 February. Available at https://is.gd/NTp8zj (accessed August 2022).

Gallo C (2016) *The Storyteller's Secret: From TED speakers to business legends, why some ideas catch on and others don't*. St. Martin's Press, New York, NY, USA.

Harari YN (2011) *Sapiens: A brief history of humankind*. Random House, New York, NY, USA.

Kilner JM and Lemon RN (2013) What we know currently about mirror neurons. *Current Biology* **23**: R1057–62

Pralle S (2006) *Branching Out, Digging In: Environmental advocacy and agenda setting*. Georgetown University Press, Washington, DC, USA.

Schmälzle R, Häcker FE, Honey CJ and Hasson U (2015) Engaged listeners: Shared neural processing of powerful political speeches. *Social Cognitive and Affective Neuroscience* **10**: 1137–43

Slovic P and Västfjäll D (2015) The more who die, the less we care: Psychic numbing and genocide. In: Kaul S and Kim D, eds. *Imagining Human Rights*. De Gruyter, Berlin, Germany: 55–68.

Stephens GJ, Silbert LJ and Hasson U (2010) Speaker–listener neural coupling underlies successful communication. *Biological Sciences* **32**: 14425–30

Stone D (1989) Causal stories and the formation of policy agendas. *Political Science Quarterly* **104**: 281–300.

Tye L (1999) *The Father of Spin: Edward L. Bernays and the birth of public relations*. Macmillan, London, UK.

Västfjäll D, Slovic P, Mayorga M and Peters E (2014) Compassion fade: Affect and charity are greatest for a single child in need. *PLoS One* **9**: e100115.

Von Einsiedel O (2014) *Virunga* [movie]. Grain Media, London, UK.

Kintsugi

Dina Fachin

Watercolour, ink, graphite and ink marker on rough paper (9 x 12 inches; 2022).

Dina lives in California, USA. Inspirations for her work include literature, mindfulness and Indigenous and Latin American studies. The series presented here is titled *Kintsugi: Climate Change and Forest*. *Kintsugi*, or the Japanese art of pottery repair with gold, is a guiding concept in Dina's ongoing work on climate change. "The breaks, the cracks and the light that gets through," she notes, "constitute an opportunity for us to rethink and change destructive human behaviour towards the planet."

Untitled

Dina Fachin

Watercolour, ink, graphite, ink marker and ballpoint pen on smooth surface (14 x 17 inches; 2021).

Higher-quality versions of artwork from this issue:
https://www.ecologicalcitizen.net/artworks.php?v=6&n=1

We Are Here (upper)

How Many Years Left? (lower)

Dina Fachin

Upper: Watercolour, ink, graphite, chalk and ink marker on paper (24 x 18 inches; 2022).
Lower: Watercolour, ink, ink marker, graphite, charcoal and chalk on paper (16 x 12 inches; 2022).

Remembering a father tree: A tribute to Dave Foreman (1946–2022)

John Davis

John is executive director of The Rewilding Institute (https://rewilding.org/), editor of *Rewilding Earth* and a rewilding advocate on the Adirondack Council (NY, USA; https://adirondackcouncil.org/). He was editor of *Wild Earth* from 1991–96.

Keywords: conservation; overpopulation; protected areas; rewilding; wildlands
Citation: Davis J (2023) Remembering a father tree: A tribute to Dave Foreman (1946–2022). *The Ecological Citizen* **6**(1): 77–80.

The wilderness community and the global rewilding movement pay tribute to a founding father. In his three-quarters of a century, Dave Foreman changed and expanded the way we do conservation in North America and inspired conservation activists and biologists to think big, wild and connected throughout the world.

Since Dave's death from interstitial lung disease on 19 September 2022, the last group he founded, The Rewilding Institute (https://rewilding.org/), has been flooded by fond remembrances and glowing tributes to his vast influence. A common theme in these grateful messages is: *Dave Foreman changed my life. I saw him give a speech in (whatever the city or university or wilderness conference), and from then on, I dedicated my life to wild things and places.*

Some of these messages from Dave's close friends and colleagues have compared him to a giant tree in an old-growth forest. This metaphor I find particularly heartening, for as we all know now, big dead trees, standing or fallen, are as life-giving as green trees. Dave is now like a mighty oak fallen in an old-growth gallery forest along the Gila River, southwest New Mexico, nurturing new generations of trees and their defenders, and guiding us as we work to protect and restore the Mogollon Wildway, linking the Gila Wilderness with Grand Canyon National Park, as part of the Spine of the Continent Wildway.

My own story hints at Dave's influence. In college, I saw him and his fellow Earth First! co-founders Bart Koehler and Howie Wolke give hellfire and brimstone wilderness speeches at a rally for unprotected wildlands. The week I finished college, I hitchhiked across the country to volunteer in the *Earth First! Journal* office in Tucson, Arizona. I thought I'd do a year of service, then go back to school. But Dave's vision was too compelling; I could not leave. For

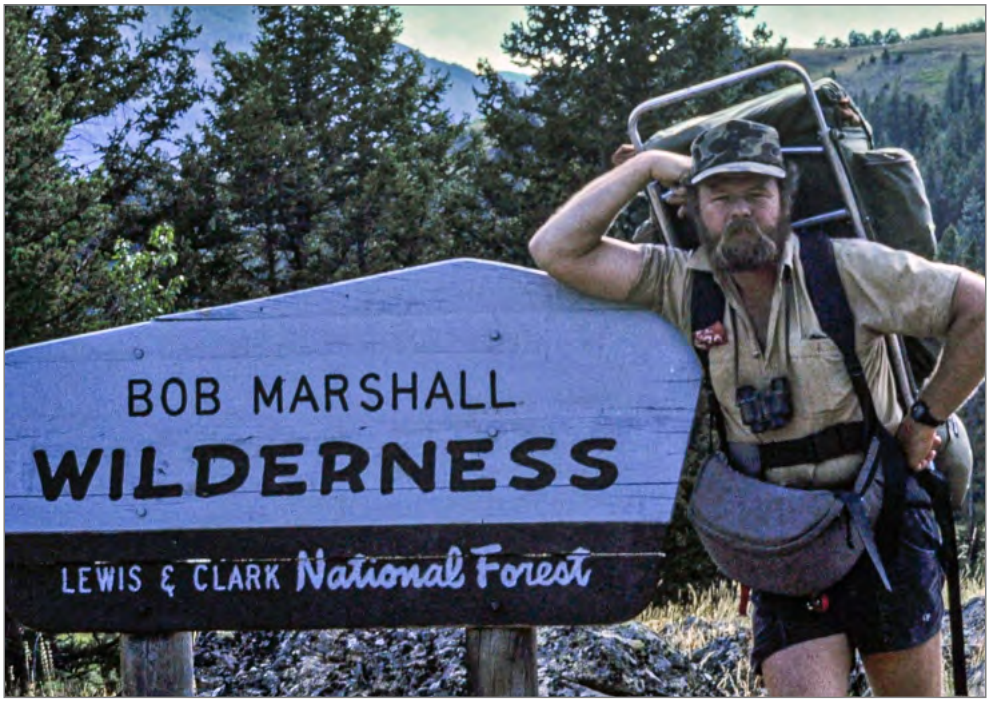
nearly four decades, I've been trying to help implement Dave's vision for rewilding North America. Thanks to him, I've lived a life incredibly rich in experiences, if occasionally lean in resources. Dave's numerous friends and colleagues constitute a powerful community – like an old-growth ecosystem – of wildlands activists, biologists and writers. I've had the honour of meeting many of them, often at the home of Dave and his beloved wife Nancy Morton (affording me the opportunity to wash dishes for some of the finest people in the world!).

I was fortunate to get to know the soft side of Dave, as well as the more distant, heroic side. As a living legend, Dave could be intimidating. He had an encyclopaedic memory for conservation and natural history and for public lands geography. He could name and describe virtually every species exterminated by our forebears in North America. He stopped timber sales on more National Forests than most Americans ever even have a chance to walk. With Howie Wolke, he completed the most comprehensive US roadless area inventory ever conducted (Foreman, 1992). As a friend, though, and for many of us as a mentor too, he was generous, funny, warm and one of the best story-tellers we had ever heard. Dave's wife Nancy was a conservation leader in her own right – among her many other distinctions serving as president of the New Mexico Wilderness Alliance. Dave always made clear, in their home, Nancy was boss, along with their beloved cats. Dave spent weeks designing and building a catarium at their home in Albuquerque, New Mexico, which allowed the cats to go outside but prevented them from hunting songbirds.

Part of Dave Foreman's great legacy will be courage. He was fearless in the face of bulldozers threatening ancient forests, of critics falsely accusing him of not caring about people and of government agents who infiltrated Earth First! when the Reagan administration perceived us as a threat to economic growth. Dave taught us to speak boldly for what wild Nature really needs.

He was not a revolutionary, however. Indeed, Dave was deeply conservative, believing that protecting our natural heritage and learning to coexist with our wild neighbours are core values shared deep-down by most thinking, feeling people. Dave always argued that conservation should be non-partisan – that people from all political parties and walks of life should embrace wildlands and wildlife conservation.

Dave Foreman was famously controversial at times. His book *Man Swarm: How overpopulation is killing the wild world* (2015) was a blunt look at how excess human numbers, in terms of population and consumption, are driving the extinction and climate crises. Dave took much heat through the years for confronting human overpopulation as a fundamental problem. He felt (and many of us who worked with him agree) that conservationists' and environmentalists' retreat from population planning advocacy was among the worst mistakes we ever made. Some others of Dave's writings were almost uncomfortably frank in how they criticized mainstream, foundation-supported conservation and environmental groups. Dave was sometimes an iconoclast, like his older friend Ed Abbey had been; and every movement needs that, discomfiting though their words can be.



Dave Foreman in Bob Marshall Wilderness Area (photo by Nancy Morton).

Perhaps the most enduring part of Dave Foreman's legacy will be the global rewilding movement. Dave coined the term 'rewilding' about a quarter century ago. His short definition of 'rewilding' was 'wilderness recovery'; but he explained it at length in his landmark book *Rewilding North America* (2004) – the closest thing to a blueprint for how to achieve what are now called 'Half Earth' goals on the world's most affluent continent. Dave grumbled often and laughed occasionally at how his neologism 'rewilding' had been adopted by manifold interest groups, ranging from drumming circles, to folks seeking spiritual enlightenment, to alternative medical practices teaching gut biome health. He occasionally chafed at the suggestion of some conservationists that rewilding start at small-scale levels, like restoring native plants to our gardens. He practiced such healing local work himself, but did not see it as rewilding. *Big*, *Wild* and *Connected* were the basic descriptors of rewilding for Dave; and he wanted to see projects protecting big core reserves and protecting or restoring the full range of native wildlife, including apex predators like wolves, big cats, bears, raptors and sharks. However, the final test for Dave on whether work lives up to the rewilding label was: does it serve wild creatures – the 'wildeors', or self-willed beasts, as Dave liked to call our furred, feathered, finned and flowering neighbours.

Dave gave his storied life to protecting and restoring a wild Earth, for wildeors of all sizes, from small songbirds to giant redwoods. Now the mighty oak has fallen to nourish new generations of rewilding leaders. He did not, in the flesh, live to see the day wolves, pumas and grizzly gears in Mexico would have unbroken lineages north along the Spine of the Continent into Canada. May the young rewilding leaders Dave Foreman will inspire achieve such big, wild, connected visions here and around the world.

References

Foreman D (1992) *The Big Outside: A descriptive inventory of the big wilderness areas of the United States* (revised edition). Three Rivers Press, New York, NY, USA.

Foreman D (2004) *Rewilding North America: A vision for conservation in the 21st century*. Island Press, Washington, DC, USA.

Foreman D (2015) *Man Swarm: How overpopulation is killing the wild world* (2nd edition). Livetrue Books, San Diego, CA, USA.

Intricacy and infinity: A tribute to EO Wilson (1929–2021)

Tony Hiss

Tony is a writer, and his most recent book is *Rescuing the Planet: Protecting half the land to heal the Earth* (2022).

Keywords: biodiversity; protected areas
Citation: Hiss T (2023) Intricacy and infinity: A tribute to EO Wilson. *The Ecological Citizen* **6**(1): 81–3.

The first time I met EO Wilson, at a lunch in his Harvard office, I got to see what a charmer he was. "Call me Ed," he said instantly, warmly. But it wasn't until the second time we met, and unexpectedly spent a week together in the Florida Panhandle, that I could see just why his writing and thinking about nature is so effective, so compelling, so helpful, and has left such an indelible mark.

I was just starting to work on *Rescuing the Planet*, my book about staving off the mass extinction crisis, so naturally I wanted to check in with the 'father of biodiversity'. We ate deli sandwiches washed down with Diet Dr Pepper and pored over maps. He was 82, clearly undiminished, an amazingly quick study, and he talked authoritatively about retaining large wild areas and smaller hotspots. I mentioned the possibility of connecting them all with long natural corridors, sinews of the biosphere. Of course, this would mean conserving a lot more land, something close to … "Half Earth," I said, out of the blue.

"Yes!" he said, getting excited. Half Earth was sound science, just what animals and plants needed, but beyond that, "if you boldly assert a goal as something entirely reasonable and feasible, people will remember, argue and think." This would "empower Americans to dream about a changed country where you're never beyond the reach of a national park" – where parks and wildlife are always in the foreground of our lives and the forefront of our minds. "We like to say national parks are the best idea the country ever had," he went on. "Now let's take it to the next level."

We stayed in touch. Ed notably went on to write *Half-Earth: Our planet's fight for life* (2016), and he set up the Half-Earth Project and launched Half-Earth Day to celebrate biodiversity and its protection (https://www.half-earthproject.org/).

A year after that lunch, Ed invited me to accompany him on what was supposed to be a quick barnstorming tour of the Southeast USA to help support the work of his friend, MC Davis, who was endowing an ambitious 300-year project in the Florida Panhandle to rescue longleaf pine (*Pinus palustris*), once

the gorgeous heart of the area's ecosystem. Then we'd scoot over to Mobile, Alabama, Ed's hometown, where he was part of an informal group agitating quietly to create a quarter-million-acre national park next door to the city. MC said he was "going to work Ed like a borrowed mule."

But on our first day in Florida, Ed was hospitalized with a stroke. Remarkably, he was out of the hospital in two days, and then convalesced for the next five days in MC's spacious guest cottage. Ed asked me to stick around for company. Recuperation was rapid and the setting definitely accelerated his healing – he was in a landscape he loved. MC's staff plied him with home-cooked Southern dinners, a fish fry one night, chicken-and-dumplings the next; there was a stash of butter pecan ice cream in the fridge to raid while catching a movie with a gripping story on TV at night. We watched *Lincoln* and *Silence of the Lambs*.

Ed's recovery plan was simple: "Walk, write, nap. And chat." He got up at seven, as usual, to resume work on an essay – in longhand on a legal pad, as always. He often got the best ideas, he said, between four and seven in the morning. The hospital had sent him home with a walker. A day later he was brandishing it over his head as he marched around the cottage. By the following day he cast it aside.

One afternoon 'Turtle Bob' Walker, a Florida naturalist and an MC staffer beloved by kids, dropped by with a baby Eastern indigo snake (*Drymarchon couperi*), glistening black.

"Oh, my God," said Ed. "Just gorgeous! What a beautiful feel."

Ed and Bob swapped stories about tramping around the woods as kids. Ed told Bob about how to hypnotize a dragonfly, something he'd learned from a man whose father had passed down the trick. Dragonflies have big globular eyes with a nearly 360-degree field of vision, likely the best eyes of any insect. They'll dart away if you move near – instead, stand still and start waving your hands slightly. Put a finger out and the dragonfly will come perch, thinking you're vegetation in a bit of breeze.

In our chats, Ed roamed far and wide. He never thought much about death, he said, since his personal philosophy about the meaning of life was, "I want to be able to look back and say, my story was worth telling." He did bring up Half Earth: "Before I go to that great rainforest in the sky, I want to see everyone talking about it, and get it embedded in UN policy."

He particularly wanted to talk about the essay he was working on, tentatively titled, 'The return of scientific natural history (the telling of epics)'. Nowadays most biology, he said, is done in a lab or on a chalkboard. Work in the field, tallying up other species, is derided as boring, mere drudgery, dry cataloguing – even if it's more and more urgent as we actively dismantle so much of the biosphere: "Nature does not give up her secrets easily, we are told. But the secret is, it's not a secret. It's waiting there to be noticed."

Since Aristotle, Ed said, classification has been the beginning of science. But even before that there is the stage of discovery, which comes alive by using a different lens. "There are a series of frames of mind that can be entered into," he said, "and throwing open a wider window of awareness sets people on the royal road to intricacy and infinity." What gets revealed is a world of marvels,

and in its long glow, "every living species is the shining culmination of an evolutionary epic. It is a survivor, a champion, the best of the best, whose story has unfolded across thousands of millennia through continuous testing and renewal."

"Well," he added after a pause, "this has been a fine session of creative thinking for me. I sense humans are now poised on a knife edge between selfishness promptings and altruism promptings. How open any mind can be is a question that could be much better explored."

Ed was 88 the last time I got to have lunch with him in his office (lobster and crab salad sandwiches and more Diet Dr Pepper). An old wall clock ticked away as we talked. He said he was being haunted by the words of 'Shenandoah' – the old folk song about rivers that's been traced back to seventeenth-century French Canadian voyageurs –

O Shenandoah,
I long to hear you,
Away, I'm bound away,
'cross the wide Missouri.

Ed said he had a new plan: "I want to take my remaining years in wild places. All I'll need is a comfortable motel within driving distance. With a TV at night."

This didn't happen. Instead, like most of us, he had to hole up at home during COVID. My own impression was that he was describing something COVID couldn't interrupt, by staking out a permanent campsite between two frames of mind – the one he'd been trained in as a scientist and the wider awareness that had called out to him when he was hypnotizing dragonflies.

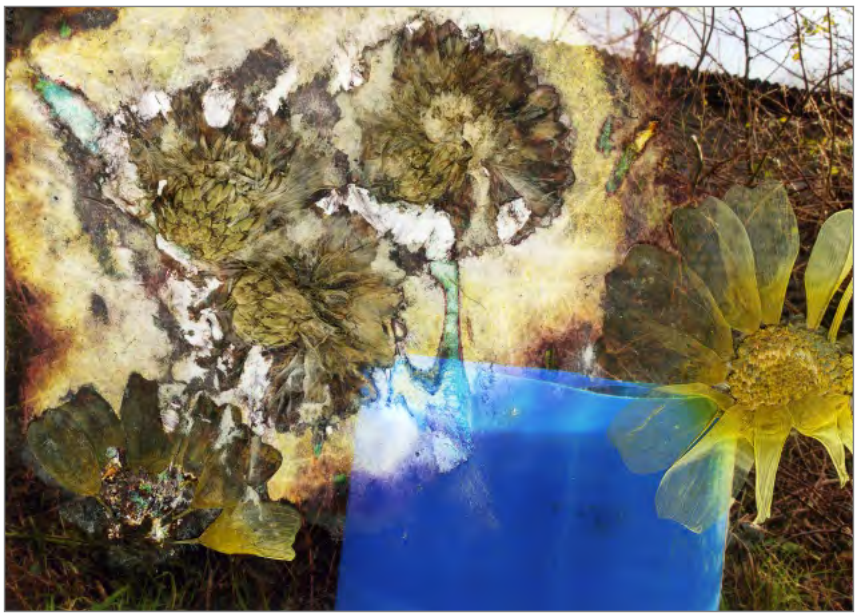
References

Hiss T (2022) *Rescuing the Planet: Protecting half the land to heal the Earth*. Vintage, New York, NY, USA.

Wilson EO (2016) *Half-Earth: Our planet's fight for life*. WW Norton, New York, NY.

Self:Build:Self – Environmental Survey series
Julian McKenny

Julian McKenny is an artist based in West Wales who uses traditional and photographic methods and who, until recently, ran a small permaculture market garden. The series presented here, which is titled *Self:Build:Self – Environmental Survey*, is one strand of a wider body of work made during the building of a straw bale house. Photographs of the build were pressed with natural materials from around the site and then rephotographed. An environmental survey was one of the regulatory requirements, and this was his emotive version of that. More from this body of work can be seen at https://www.julianmckenny.com/.



Julian McKenny

Higher-quality versions of artwork from this issue:
https://www.ecologicalcitizen.net/artworks.php?v=6&n=1

Julian McKenny

Higher-quality versions of artwork from this issue:
https://www.ecologicalcitizen.net/artworks.php?v=6&n=1

Julian McKenny

Higher-quality versions of artwork from this issue:
https://www.ecologicalcitizen.net/artworks.php?v=6&n=1

Poetry and prose section

Edited by Victor Postnikov

Victor is a poet, essayist and translator whose home is in Kyiv, Ukraine.

Life far exceeds humans. For millennia, ecopoets have understood it as a far greater enterprise. In their poetry, we can hear the voices of those who came before us and those who live alongside us. Now, however, they face extinction and die in silence, deafened by the roar of civilization. The time has come to renew the old understanding that all life, including humanity, speaks a common language. Thus, the mission of ecocentric poetry, or ecopoetry, is to help us empathize with non-human entities, be they a whale, a tree or a mountain. For we are all kin. Through metaphor and imagery, it speaks directly to our hearts and genes. We begin to realize that we have evolved together and share a common fate.

CLASSIC POETRY

I know the truth

Marina Tsvetaeva

I know the truth! Throw other truths – away!
No need to fight those we hold dear!
Look: night is creeping to erase the day,
What do you say – the poet, lover, brigadier?

Now, wind is low, and the dew is on,
Soon we shall see the starry blizzard gone,
And all be sleeping underneath the stone,
Who wouldn't let each other sleep alone.

Translated by VI Postnikov.

CLASSIC POETRY

Kingdom of birds

Czesław Miłosz

In higher skies, a heavy capercaillie
Wings over forests of the land,
A pigeon swings in windy wildness,
A raven dashes like a blade.

What is the earth to them? A lake of darkness,
The night I always have to drink.

Yet their homes are sunlit islands,
Sheltered by inaccessibility.

When with a beak they cherish their feathers,
One may descend – it slowly drifts
And kisses cheek – a hail from other quarters,
Where all is clear, and beautiful, and free.

Translated by VI Postnikov.

CLASSIC POETRY

Forest of Arden

Zbigniew Herbert

Cup your hands as if to hold a dream
just as a kernel draws water into itself
and a wood will appear: a green cloud
and a birch trunk like a chord of light
and a thousand eyelids start to flutter
speaking a forgotten tongue of leaves
then you'll remember a white morning
when you waited for the gates to open

you know this land will be unlocked
by a bird that sleeps in a tree in earth
but here is a source of fresh questions
the currents of evil roots run underfoot
so look at the bark's pattern on which
the chords of music are stretched tight
a lutenist adjusts the pegs of the strings
to draw a sound out of what is silent

gather leaves: a wild strawberry patch
dewdrops on a leaf the comb of grass
and then a golden damselfly's wing
and there is an ant burying its sister
higher up above belladonna's treacheries
the wild pear is sweetly growing ripe
therefore expecting no greater reward
sit yourself down underneath this tree

cup your hands as if to hold a memory
like a dried kernel of perished names
and another wood: a cloud of smoke
a forehead marked with black light
and a thousand eyelids stretched thin
over the unmoving rounds of the eyes

a tree broken like bread with the wind
the betrayed faith of deserted shelters

and that wood is for us and for you
the dead have need of fairy tales too
a clutch of herbs water of memories
so over the pine needles and the rustles
over the sheer spun silk of fragrances
no matter that you catch on a branch
and a shadow leads up steep passages
for you will find and unlock the gate
to our Forest of Arden.

CLASSIC POETRY

Nemesis (from *Pansies*)

DH Lawrence

If we do not rapidly open all the doors of consciousness
and freshen the putrid little space in which we are cribbed
the sky-blue walls of our unventilated heaven
will be bright red with blood.

CONTEMPORARY PROSE

Four Visits to an Ancient Granary in the Utah Canyonlands

Leath Tonino

Across the wash, up the white ridge, down diagonaling ramps, look right, two alcoves. In the lower one. Something boxy. A granary?

I contour slow, say my little piece—just here to observe, not mess with stuff, stay a short while, not entitled, just asking permission, is this cool? No answer from the land, from the quiet, but asking feels good.

Out a shelf, over black and gray and olive lichens. Stand on the ledge below gran, maybe fifty feet away. Half of it's rubble, the other half intact. Mud, blocks, logs atop, crisscrossed with sticks. A circular thing. And then, the very moment that I arrive, that I pause there, a peripheral darting. Turn and a bird zips straight in along the cliff face, disappearing inside the gran. You've gotta be kidding me. Did that just happen? Haven't seen a single bird in two hours of hiking, only dim skies, chilly wind, white rock the foot grips, canyon plunging away, exposure increasing. And now the one bird I do see flies straight into the gran?

A canyon wren, wow. Popping up, perching on the broken masonry, flitting to another perch, flitting, flitting, off around the corner. Gone.

I take a seat, still fifty feet away. Don't allow myself to go any closer on this first visit.

* * *

Sitting with gran at my back today. Why? Almost like I'm trying to give it privacy, trying to not put pressure on it, pressure to become clear in my understanding—number of sticks, height of walls, what it is—or, worse, pressure to mean something. Like the herd of browsing mule deer I startled earlier. Rude to stare at them. Let them be.

This isn't about the gran, is it? I suspect this is about sitting with a place. The gran creates a reason, an anchor, a "seat."

Not sure why I put that in quotes.

Something sharp is poking my butt, needling me. For a moment I consider that it could be gran trying to get my attention. So I turn and, hey, the wren is back, dangling upside down from a crack, not looking at me, but not really not-looking at me either. Reach a cold hand into the seat of my jeans, rub at the prickery spot on my butt. A pine needle, oh.

I think the magic of the place, the power of it to transform you, make you move slowly, carefully, delicately, notice stuff, feel a tingle zip up your spine, I think it has less to do with any inherent specialness, like the presence of a granary, and more with the method of approach, the manner of engaging, the deep desire, manifested in the body and mind, pinky toes up to thinking head, to not mess shit up, to be a gentle visitor, a grateful passenger on the journey of the site. Isn't every spot on every map, and every unmapped spot too, a possible site of this sort, a possible ride, if only we bring a certain disposition, comportment? Gran, no gran, in either case we can tiptoe, our feet and our thoughts going lightly, alertly.

Steady wind, but somehow simultaneous stillness, as if there is nonmotion at the center of this motion —that kind of wind, that kind of evening.

Gets so damn cold that I stand up and pace, swing my legs and arms to keep what little warmth I've got flowing, keep it fluid. Would like to stay longer, stare into afterglow, dying colors, the fade to night giving birth to new moods in my mind, but the wind has worsened, is worsening, and no stamping or shaking or pacing is going to prevent me from going brittle, iced over.

Nose drip. Big shiver.

* * *

The wren chirps once when I arrive, a sound from above, from a hidden cubby. I say hello, wait. Minutes pass, a frigid wind blowing through them. Waiting for the wren—to do what? to make a sound? to show itself?—I strip, put on long

johns, tuck pants into socks, jacket into pants. Then, one shoe still untied, I hear the sharp high call and there's the white breast, the orangey flanks. A quick short shot, up out of the gran's rubble. Thin strong feet gripping a ledge. Hello, I say again, though the bird likely heard me the first time.

Back at my seat. Same seat as yesterday and the day before, different view. Always a different view, always difference within sameness.

Sit and sit, get cold and colder. Three hours of this, clouds easing across the sky. I want to pull my hood up, cinch it tight, but doing so would, it seems, shut out the place. Periphery, that's the ticket. Places are never focused, never condensed, never centered, even when there's something like an attention-grabbing granary. You can't look straight at a place, can't put on the blinders of a microscope or binoculars to get a richer, fuller sense. You'll miss the edges, the interactions, the flickerings and flutterings, the faint creatures of the periphery. Thus no hood.

Raven croaking, flying with its shadow, the two of them winging across the blank pink of a huge cliff across the canyon, out beyond my toes.

* * *

All right, here we go.

I step up gingerly, where I haven't yet allowed myself—haven't yet wanted? haven't yet been invited?—to step. A few moves, balancing, trying not to disturb a grain of sand, and I'm there, side by side with the gran, looking under it, into it, through its cracks. The thing breeds quiet in me, total attention, like a sleepy animal I badly want to leave undisturbed, let wake when it wants to wake, slumber forever if it so chooses. Not a grain of sand, brother, don't nudge a grain.

Cobwebs, invisible from a certain angle, clot the fallen rubble. Small brown twists of leaf, blown in from elsewhere, tremble on the webs, creating a kind of force field, a gauze of energy surrounding the gran. Tripwires, brother, don't trip a single web, don't break a single thread.

What holds the world together?

Mortar mud is yellow, about as thick between stones as the stones themselves, an inch, two inches, three inches. Glop, child's sandcastle at the beach, fat handfuls smooshed down, pushed into chinks, no clean finish, yet the swipe of an index finger, the pat of a palm, more or less apparent.

Wait, really? Finger tracks? Not sure if I'm seeing these strokes or just intuiting them. Regardless, I'm feeling them, hands in my pockets, touching nothing.

Seriously, I feel my own pocketed hands patting, swiping, adding water to the sand, glopping on more, shifting the stones, making it sturdy. Ah, how the ancient motion is here before us. Wind in rock. Hands in mortar. Paused in time.

Is that what makes it powerful, the knowledge that somebody stood right here, placed herself just so, hand like this, then like that? Is it this sense of petrified motion? Mud holding the movement of a hand, a mind, a hunger—is this what moves me? Am I even moved, standing here very still, looking, wondering, or am I just standing very still, looking, pretending to wonder, and not really feeling much of anything? I don't think I'm forcing this. I don't think this is me trying to be "deep" or whatever. Not a wannabe shaman, not be. Just trying to pay attention. React in the moment, if such a thing is possible.

I dunno, I dunno. No need to analyze. No need to complicate.

My last visit, at least for this trip, this lifetime. My life in the city, my life in the noise, my life elsewhere calls. I will respond. So be it. And now I will say goodbye.

A long stare at the gran. A nod to the wren, the wren that hasn't shown today, the wren that I'm certain is near. Taking in the lichens, the twigs, the swirls inside slickrock. Taking in the slickness, how my shoes hold tight here on a shelf in the middle of a cliff, on a narrow ledge, so much above me, so much plunging away below.

And then it’s goodbye for real, walking fast, sun setting, too cold to stop and look back over my shoulder, teeth chattering, heart pumping, breath a ghost escaping with each exhale.

CONTEMPORARY POETRY

Empty trees

SC Flynn

A town, complete in indifference,
where noon falls heavy as a concrete slab
and the days are long, bright and vast,
far too large for their meagre content,
waiting for the promised arrival of something.
There should be vultures on those branches
watching the efforts of the humans
to give a semblance of meaning to their lives,
but this silence slowly maturing
in a world bleached of meaning was their fate.
Wings of the past lightly brush your cheek
and for a moment you see them again:
refugees migrating into extinction,
heads bowed against the bitter wind of time.

CONTEMPORARY POETRY

Elytra

Sarah Westcott

our screens are clear something larger sounds birds & bats are falling
we walk out at night as if we've been punched we come round
broken carcasses crunching like glass some of us will tell
of their colours how they looked when crushed onto the pages
& you could lift the frame off the paper folded into likeness
how they struck our brows & you could hear them breaking like tiny eggs
tiny thud of guts thuds & indentations hard little carriers always metaphor
& children will look in disbelief as if any of this was ours to tell

CONTEMPORARY POETRY

Earthed

Sarah Westcott

This other living, living here.
Language dragging on its subjects.
I'll body my body – cranial dome,
a garland of coral. Sea swell.
Cup the light under my face
take the feet and arms,
angel with a shock of hair
not vengeful but exercised.
What do I see through the trees?
Songs to a far-off son, a tongued trunk
and what of the fished snakes,
brown scope of water?
My voice needs soft rain
stepping on light-feet, the notes falling, opening.
Heart beats are a landscape,
I am a bridge, close to a face
the face is chalk countless lives
fantails, orange eyes, magnetite.
Weather falling: thick American snow.
I was a child, I was a soul in a green-white bower,
who called me into this language?

CONTEMPORARY POETRY

Intrinsia

Peter D VanderBloomer

We strive, understandably,
To preserve what flatters our fancy,
What gilds the path we walk—
Manage the harvest so that we can
Harvest evermore; myopia
Is a curse we seem actually able to cure

When the requisite motivation trips the wire
And the tangle of axons
Fire like the sky's electric storm
To the tune of delighting in that which
Beaches itself upon humanity's shore.

But is there not an incentive of a saintlier breed
Than simply securing salvation
For that which we may encounter
And be delighted in?
What of everywhere man has never strode,
Those fish that were there below the murk
But never brought twitch to baited pole, and the
Life that crawls just past where the firelight falls?
A black box to us
That retreats from our every probe,
Found everywhere and always
Save for the dim dawn we've spawned
In a tremendous night—a black box to us,
Illumined though, perhaps, to itself from inside.

Alongside us reality thrives, brightly
In the places and times our light will never shine:
The delights I will never stumble upon,
The awe I will never know,
Save for the thought that, intrinsic,
It glows in the swollen interstices
Unreachable from the filamentous paths we breach
Through the universal body;

And of this otherness that I will never unite with,
Why, pray tell, do I love the thought of it—
This great material-god extended beyond—
And shiver in delight
To think of us and all we've ever seen and thought as
But a tangle of illumined filaments
Feebly firing in a tremendous night?

About the contributors

Marina Tsvetaeva (1892–1941) was possibly the greatest Russian female poet of the 20th century. She was unrivalled in her passion, lyricism and language experimentation. She committed suicide.

Czesław Miłosz (1911–2004) was a Polish-American poet, prose writer, translator and diplomat. Regarded as one of the great poets of the 20th century, he won the 1980 Nobel Prize in Literature.

Zbigniew Herbert (1924–1998) was one of Poland's most eminent poets. The Forest of Arden in Warwickshire figured importantly in *As You Like It*. But it's possible that Herbert was also thinking (as was Shakespeare) of the Forest of Ardennes, in Belgium and Northern France, which was the site of fierce fighting World War 2.

DH Lawrence (1885–1930) was an English writer, novelist, poet and essayist. He was a critic of modernity and industrialization, and a proponent of emotional health, spontaneity, vitality and instinct.

Leath Tonino is a freelance writer and the author of two essay collections about the outdoors, both published by Trinity University Press: *The Animal One Thousand Miles Long* and *The West Will Swallow You*.

SC Flynn was born in Australia of Irish and Scottish origin and now lives in Dublin, Ireland. His poetry has been published in more than ten countries.

Sarah Westcott has published a pamphlet and two collections with Pavilion Poetry, Liverpool University Press. Sarah was a news journalist for twenty years and now works as a freelance tutor and writer. Poems have appeared on beermats, billboards and buses, baked into bread and installed in a nature reserve, triggered by footsteps.

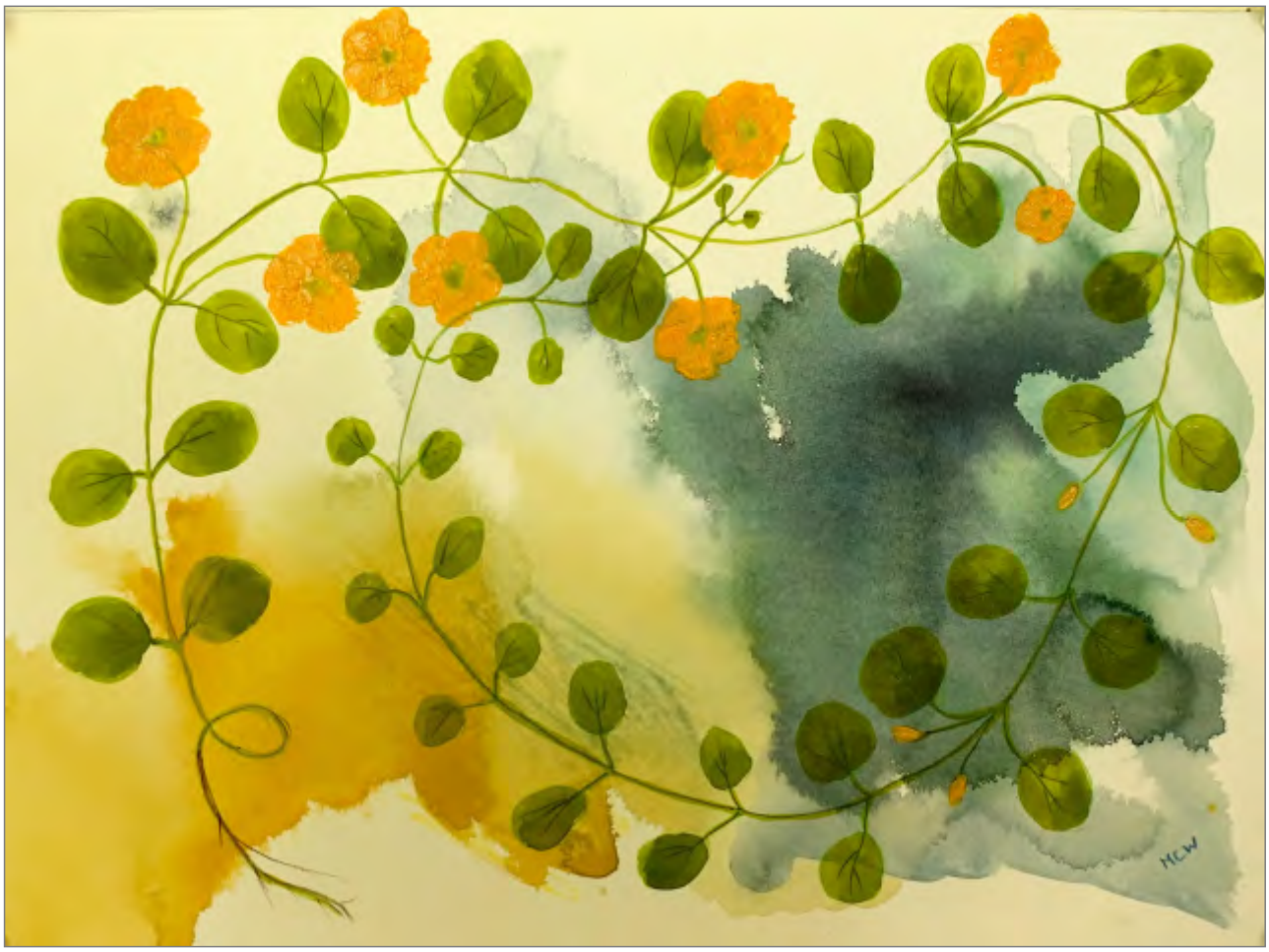
Peter D VanderBloomer is a biologist and poet from the Chicagoland area.

Dandelion (left)

Moneywort (below)

Mary Waltham

From the artist: "These two pieces and those on the following pages make up *Small Miracles*, a body of work produced in response to spring and summer in lockdown in Princeton, New Jersey, during the Covid-19 pandemic. Every day I walked in the woods and fields around me. These works focus on the form and colour of wild plants in a series of paintings using water-based media. The intention was not to mimic botanical illustrations but rather to capture the small miracles emerging each week, as the world swirled in chaos. All paintings are on hot-pressed watercolour paper (10 x 14 inches). Please note that the medicinal information included relates to *former* uses."



Jewelweed

From the artist: "This plant contains a compound called lawsone in its leaves that is proven to have anti-histamine and anti-inflammatory properties. It is a remedy for poison ivy."

Higher-quality versions of artwork from this issue:
https://www.ecologicalcitizen.net/artworks.php?v=6&n=1

Jack-in-the-pulpit

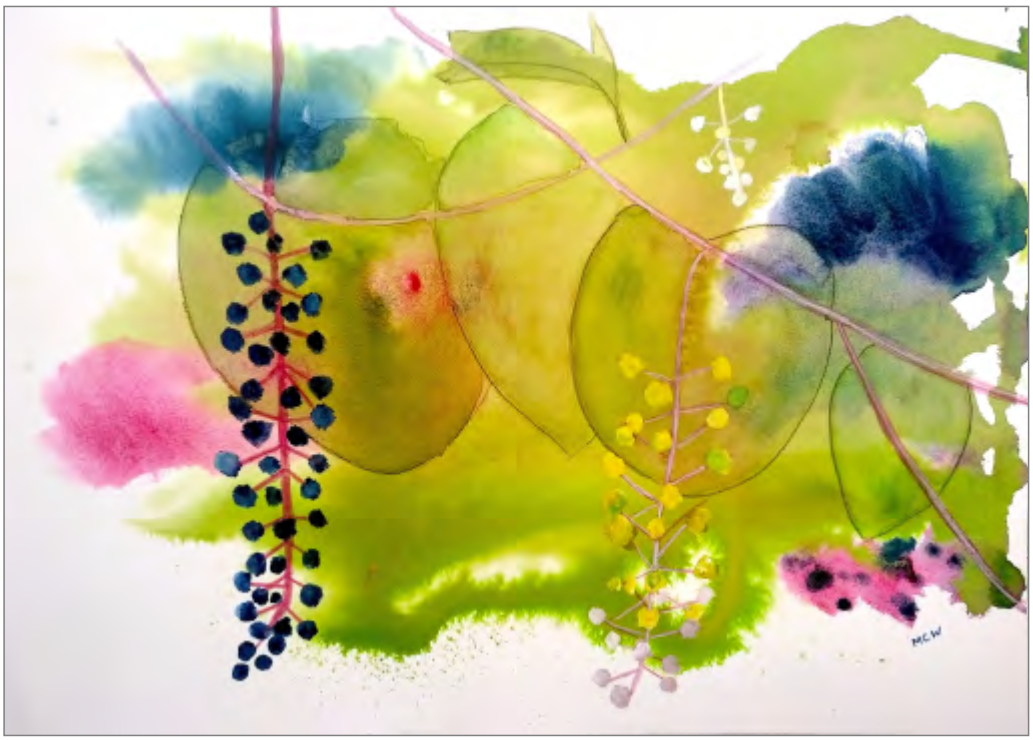
From the artist: "The acrid root is an antiseptic, a diaphoretic, an expectorant, an irritant and a stimulant."

Higher-quality versions of artwork from this issue: https://www.ecologicalcitizen.net/artworks.php?v=6&n=1

Queen Anne's Lace

From the artist: "Formerly, this plant has been used for urinary tract problems including kidney stones, bladder ailments, water retention and excess uric acid in the urine, and also for gout."

Higher-quality versions of artwork from this issue:
https://www.ecologicalcitizen.net/artworks.php?v=6&n=1



Pokeweed (top)

Swamp mallow
(right)

From the artist: "All parts of pokeweed are toxic, and juice from the plant may cause dermatitis. Swamp mallow has demulcent and emollient properties and has formely been used in the treatment of dysentery, lung ailments and urinary ailments."

Higher-quality versions of artwork from this issue: https://www.ecologicalcitizen.net/artworks.php?v=6&n=1

Fiction section

Edited by Joe Gray

Joe is a field naturalist and conservationist who lives on the island of Great Britain. He writes eco-fiction under the pen name Dewey Dabbar.

At a time of great uncertainty about the future conditions that life is going to face on Earth, even in the near term, and when readers of non-fiction are increasingly wearied by facts and growing warier by the day of misinformation, fiction offers a powerful alternative means of conveying messages of deep import, be they ones that will help shift mindsets or those that will directly inspire action.

The opposites

Monika R Martyn

No one appreciates swarms. Swarming bees, swarming hoodlums, swarming locusts, swarming words of hatred.

No one understands swarming except those who do the swarming and bond to accomplish something far greater than self. The exception is hoodlums, of course, who swarm for similar reasons but are motivated by a calling that has little to do with the greater good.

Margo Fister didn't like swarming either. She didn't like the swarm of ants in her garden, the swarm of invasive aphids curling up the leaves of her elm, the swarms of bees that sent her running.

But Margo Fister had a remedy for those swarms. She boiled the ants alive in their underground tunnels. She sprayed the aphid nest with concoctions of this and that.

She suffered through the swarms of bees because, well, everyone loved bees.

And she hated all yellowjackets equally whether they swarmed or not. You could say she was unanimous in her hatred—no favoritism. Distinguishing between wasps and hornets or any other swarming insect had no bearing on her unanimous hatred.

She had just smashed a yellowjacket with her sandal ten times. One to stun it. Two to kill it. Three to ten to release her pent-up hatred.

Margo Fister had another weapon against yellowjackets. She hung bags of wasp traps. She reveled in seeing a wasp trapped inside the clear plastic pouch strung from the gutter and swinging in the evening breeze.

When Margo Fister sat on her outdoor recliner in the evenings, she enjoyed watching the wasps inside the bag struggling to get out. 'Die already,' she'd mumble into her large glass of wine. Dead wasps were an excellent reason to celebrate.

What Margo Fister didn't understand was that her hatred was unfounded. Sure she had stepped on a wasps' nest as a child. Sure she got bitten repeatedly. She ran, arms flailing, and the wasps became entangled in her thick hair. Sure she had a hundred sting marks before her mother could smash all the attacking wasps to smithereens.

What child wouldn't have sobbed uncontrollably, counting all the welts on her head, arms, legs, neck, back, and hands?

Thirty-five stings—we're all shaped by our childhood experiences, and Margo Fister's hatred for wasps was deep-seated.

Margo Fister hated the plastic bag dangling from the gutter nearly as much as she hated the wasps. Just having to protect her garden sanctuary from an invasion of the ghastly stingers fueled her anger.

She'd been watching the body bag dangle for a few weeks. She typically liked to replace them once a month. The more wasps she murdered, the better.

Last year, she watched one after another enter the bag and eventually became wasp soup. There must have been a swarm nearby. If anything, her neighbors should be thanking her for trying to eradicate the nemesis. But she didn't believe in platitudes from people she couldn't abide.

Margo Fister also disliked the girl upstairs. Some weirdo with tats and piercings and big clodhopper boots. At least the girl was reasonably quiet and kept strange hours, so they never had to meet face to face and make uncomfortable small talk.

The girl seldom went out. Her name was something like a season, a day of the week, or a name that made no sense to Margo: Summer, April, Tuesday, Skye, or Holly. Hope, yes, it was Hope. Margo's mind never could make sense of frivolous names. Faith, yes, that was it!

She worked from home and had her groceries delivered. The girl had those pods sticking out from her ears whenever she went out—a sure way to avoid conversation.

Vegan.

She had said this when Margo commented on the first grocery delivery.

Margo Fister swirled her wine. Margo didn't know that the wine in her glass was partly thanks to the contributions of wasps. Wasps and wine shared an intimate balance with grapes and relied on each other—sort of.

Dusk was settling nicely around her. Albeit an evening chill gave her goose pimples, she enjoyed this final hour before daylight vanished completely. Most evenings, Margo couldn't wait for the morning, start anew, and hope for something better.

The last of the insects and birds swooped past her. She'd just watched a wasp's last attempt to find an exit from the plastic death trap. Finishing her drink, she rose and headed for the garden shed. Now was as good a time as any to replace the bag and kill more of those nasty buggers.

While rummaging in the shed, her phone rang. It was her son. Warren could do no wrong. He was the apple in both of Margo's eyes. Warren never came home much. He had a big job in the big city with big and important friends. It hardly mattered that Margo suffered from all kinds of ailments that she spoke

about to everyone and anyone except Warren. Warren was too important and too far away. He did not have time to worry about his mother aging two thousand convenient miles west of him.

"You heard from Jod?" Warren used his sister to shift the conversation and guilt away from him. Jod. Jodster. Jody. Jo. The apple of her father's eye. Too bad father left by way of a massive heart attack. Too bad Margo and Rob Fister had divorced five years earlier. Too bad that Rob left a young widow with debt to shoulder. Too bad that Jod had taken sides.

"Yes. She came by to mow the lawn. I would have done it myself, but the mower's been acting up. How she lets the grass get so long when she knows it bothers me so much."

"Well, you know it is. She's busy with that brood of hers. Too bad she wasted all that money on education."

"Didn't even bother bringing the baby. Says she can't cut the grass and look after an active toddler. As if I couldn't manage. Raised you two pretty much on my own. Your father was gone half the time on his business trips."

"How you did it all amazes me, Mother. Eva and I were just saying that the other day. The smartest thing we ever did was bring that au pair from the Philippines."

"Well, you do have that loft over the garage that would have gone to waste otherwise."

"Speaking of loft? How's the tenant upstairs?"

"Hardly see her. I'm assuming she deposits the rent check on time?"

"Always the day before in fact. Seems a bit odd, though."

"Looks it. But she's quiet. Vegan. Or vegetarian. Not sure exactly what the difference is."

"Actually, one of my business associates knows her. She's a freelancer. Does some work for him in building his professional portfolio. Says she's quite good."

"Well, she's not one for talking."

"Oh. Sorry, Mother. I have to take this call. It's our travel agent."

"Good. You've decided then where you're spending the summer holiday?"

"Yes. I'll call you. Bye."

The phone line went silent, and Margo suddenly found herself standing by the shed, forgetting why she was there. Warren called her weekly. Or at least monthly. Such a good boy. Too bad he had to go through all the hassles of that court hearing about discrimination. How those immigrants teamed up on him and his company was disgusting.

"Ah! The wasps." Margo suddenly remembered.

Margo Fister rummaged in the plastic tote and pulled out another wasp body bag. She used these bags so frequently that she didn't even read the instructions anymore.

When she turned the corner and took the steps up to the deck, she saw what looked like the flat heels of black boots vanishing up the stairway that led to the upstairs studio.

Margo Fister glanced up and saw the light turn on in the studio apartment above her ground-floor home. Warren had said signing the house over to his

name was a good idea. He had paid for the conversion and zoning application. The rent for the loft covered the remaining bit of the mortgage.

Without paying rent, Margo Fister lived off the investments Rob bought all those years ago. It was the one thing he got right. Margo Fister wasn't wealthy, but she also didn't have to scrimp and save. She also didn't have to work, something many of her acquaintances had to suffer through, to make ends meet.

To make ends meet. Margo Fister enjoyed that expression. Her ends were met by the caring attitude of her son, Warren Fister, who now managed her investments and sent her a monthly allowance.

Margo Fister pulled the small step-stool towards the wasp body bag. She reached up and steadied herself with a hand on the downspout. Nasty buggers! She grinned while hoping to remove a full bag.

It happened faster than Margo Fister ever expected. The shock sent her tumbling. It wasn't a wasp sting that surprised or infuriated her. It was the empty bag. The impossibility of no dead wasps sent a heaving shockwave of surprise.

While going ass over teakettle—another expression Margo Fister used to enjoy—the sweet liquid substance from the bag emptied onto her face and blouse. Her back made contact with the arm of her chair, but it didn't stop her from dropping the entire distance, all the way until the cedar decking broke her fall.

Winded and stunned, she watched the bungee cord dangling above her. How the hell could it be empty? Did wasps develop some sort of intelligence and escape? She spat the foul taste of the liquid sideways onto the deck and dragged her bare arm across her mouth. While laying on the deck, she did a quick inventory. An excruciating stab on her side surprised her, but she was sure nothing was broken. She also did a sideways scan to make sure nobody saw her fall. It was so embarrassing. She rolled over onto all fours and righted herself. It only hurt when she inhaled.

Her body signaled that despite there being no broken bones, she'd feel the fall in several places in the morning. Using the deck railing to upright herself, she brushed the dust and leaves from her slacks and blouse. She left her glass, the empty body bag, and the replacement bag on the deck and locked the door behind her.

In the bathroom, Margo Fister stripped off her clothing. Her left torso sang with red bruising, and a welt formed where the arm of the chair left an impression. She probed the tender area with her finger, as people do, and tested the pain scale. She slowly realized that the searing pain was perhaps a broken rib.

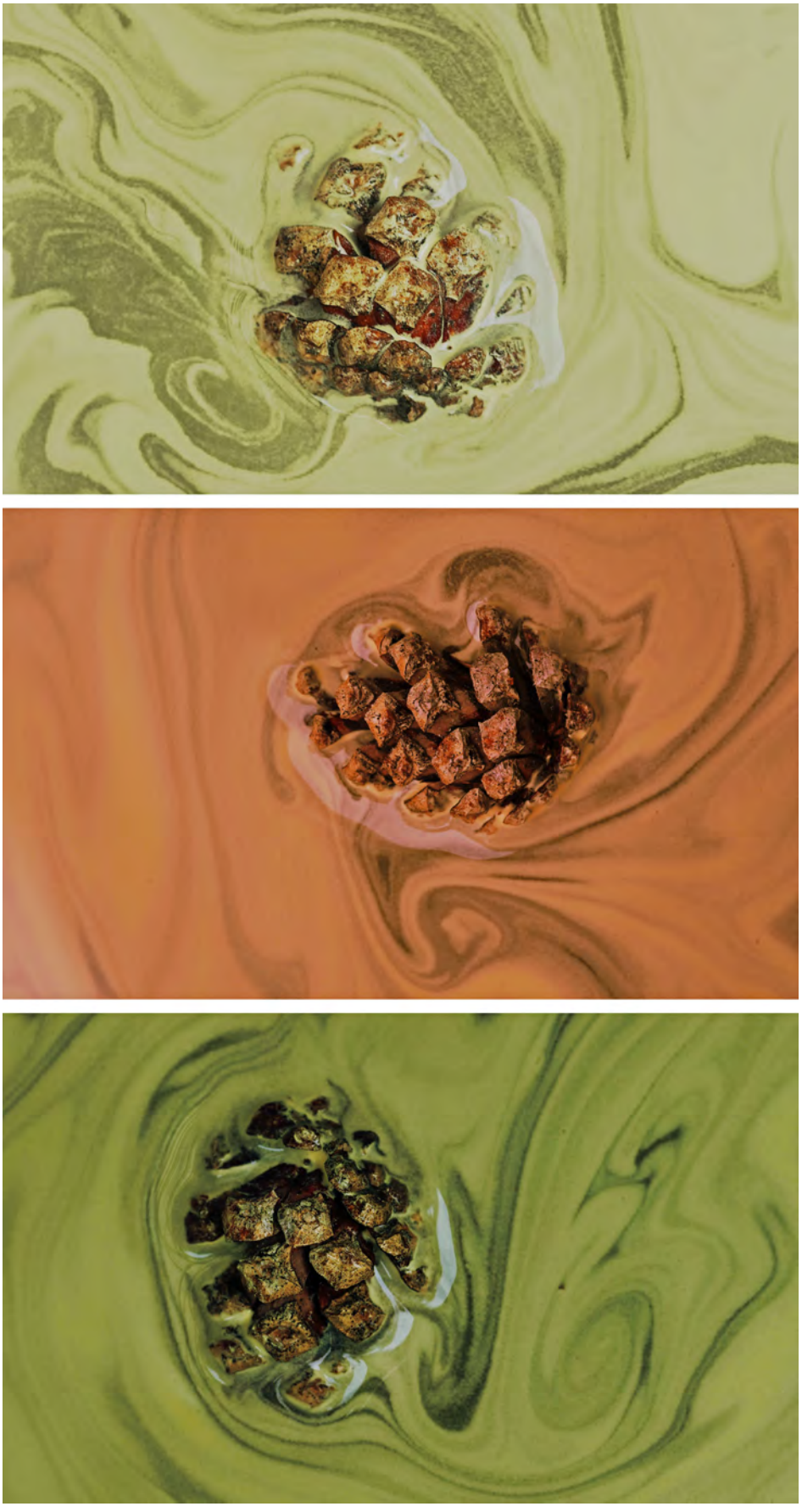
Upstairs, the vegan tenant blew on the wet wasps, breathing life into the wings that were slowly fluttering. This week she'd rescued ten wet wasps. Not all of them survived. Faith had cut a discreet hole in the bag for those who could find their way out.

Looking out her window, she'd seen the horrific contraption dangling on the bungee. The idea of the cruel death kept her awake at night until she couldn't stand it any longer and had to intervene. Faith had been mortified by the

cruelty and waited one night until the lights went out in the house below. She hated the unnecessary brutality toward these beautiful insects in the complicated landscape of life.

About the author

Monika R Martyn is a two-time Pushcart nominee, minimalist, and ardent wasp defender.



Scots pine cone and pollen

Joe Gray

Photographs from 2022 of a cone in Scots pine pollen that amassed naturally upon the water surface in a bucket being used to collect rain for a bushshower (colour filters were applied in Photoshop to the middle and bottom images to honour, respectively, the tree's red-brown bark and dark-green needles).