CHAPTER II

Animals

Eileen Crist

Defaunation: a neologism coined in the early twenty-first century to refer to (1) the massive decline of wild animal populations and species; (2) empty forest, empty landscape, empty reef and empty ocean syndrome; (3) the de-animation of the world; (4) wild vertebrate biomass trumped by the biomass of livestock and humans.

The Human-Animal Rupture

The humanisation of the world began unfolding when agricultural humans separated themselves from wild nature, and started to tame landscapes, subjugate and domesticate animals and plants, treat wild animals as enemies of flocks and fields, engineer freshwater ecologies, and open their psyches to the meme of 'the human' as world conqueror, ruler and owner. Permanent settlements, surplus food production, engineering projects, population growth, defence of territories and the drive to expand territories – all these developments were entangled with the further emergence of empire, social stratification and militarism. With the advent of Western civilisation in particular, a human-non-human hierarchical worldview took shape. 'A cultural formation', as environmental philosopher Val Plumwood wrote, 'going back thousands of years that sees the human as part of a radically separate order of reason, mind, or consciousness, set apart from the lower order that comprises the body, the animal and the pre-human'. Thus was the forging of a new human identity initiated with the birth of civilisation. Defaunation was incepted.

Over time, the new human elaborated a view of the animal that ruptured from the totemic, shamanic and relational past. Animals were disempowered politically and psychically. Politically, for no longer being related to as co-citizens of place – as beings with whom to enter into conversation, partnership or negotiation. Psychically, for no longer being deemed as embodying a spiritual force that humans might learn from, avail of, defer

to, harmonise or contend with. This rupture between human and animal was like shutting a door, an interspecies portal where human beings and animals would meet within quotidian and liminal spaces of physical encounter, ritual, dialogue, quest, alliance, dreaming and thanksgiving.

The new human of militarised, hierarchical mass societies embarked on defining, shaping and consolidating a newfound identity in contrast to the animal. This contrast was paramount to the elevation of the human into distinguished status. The animal, after all, most often has a face, and a face undeniably signifies physical and mental continuity: kinship. Looking into the face of an animal - rhino, bear, dog, tiger, manatee, swallow, frog, lobster – resembles looking into a mirror that shape-shifts the human face. In order to elevate the human above the animal, the mirror had to be broken; this required protracted work, including the elaboration of human-supremacist ideas in philosophy, political thought, science, theology and spirituality.² Dominant systems of thought that arose after the advent of civilisation - with its interconnected systems of territorialism, large-scale agriculture, livestock keeping, caste/class/gender stratification and militarism - gave pride of place to the (distinguished) human. In civilisations both Western and Eastern (but most especially Western), the image of the 'dumb brute' came into prominence, even as that image was perennially precarious and ever contested by minority voices from antiquity forward. In our time of global ecological deterioration brought on by the 'distinguished' human, the representation of the 'dumb brute' – the animal as lacking by comparison to the human – is finally crumbling. A new human consciousness is labouring to birth itself and struggling to restore the broken mirror.

A Long History of Defaunation

Killing wild animals goes back. Wherever 'civilised' humans went, wild animals receded and wildlife shrank. Neither ferocity towards nor fear of the human presence is an automatic reaction of wild animals; rather, civilised behaviour turned such responses into default settings. Stories of 'first encounters' often conveyed curious and fearless animals, like Charles Darwin's descriptions of Falkland Island wolves and naturalist Georg Wilhelm Steller's experiences with Steller sea cows.³ Both species were slaughtered out of existence by people who took advantage of their gentle, inquisitive spirits. Wild animals have learned to fear civilised humans, and to the extent that there exist 'genes for fear', these have surely been favoured by natural selection.

EILEEN CRIST

Relations between humans and animals have not always been warped by violence, exploitation and terror. Nor is it likely that humanity will remain on that path indefinitely. Indigenous people cohabited with wild animals in more egalitarian, neighbourly relations that fostered links of common understanding. To draw on an example, the anthropologist Barbara Smuts describes how the Ju/wa hunter-gatherers in the Kalahari Desert of southern Africa 'had a truce with the local lions such that neither harmed the other'. One day:

Four Ju/wa hunters were tracking a wildebeest that one of them had hit with a poison arrow. When they caught up with the dying wildebeest, a pride of about thirty lions surrounded it. The men, who were unarmed and of small stature, moved slowly toward the lions and announced that the meat belonged to the people. Several lions retreated. Others held their ground for a little while, but as the men descended on the wildebeest, still speaking quietly but firmly, the rest of the lions faded into the bush. The Ju/wa, apparently unworried, killed the wildebeest and processed the carcass.⁴

'Years later', Smuts continues, 'the situation was very different. The Ju/wa were gone, forced to move into settlements, and the new people in the area did not understand lions. An ancient interspecies tradition was broken, replaced by mutual fear and mistrust.'

Animals were hounded and slain, or else fled before civilised incursions. Asian elephants, for example, inhabited most of Asia, but were extirpated from 85 per cent of their historic range. Tigers spanned from the Caspian Sea through China and from Siberia to India and Oceania; they were also annihilated from the greatest portion of their former habitats. In Europe, from antiquity onward, lions, wolves, bears and other carnivores were killed or pushed to marginal lands, while the auroch, Europe's native herbivore, was driven to extinction by the early seventeenth century. This trend of extinguishing big carnivores and big herbivores, begun millennia ago, has accelerated in our time. Big animals are globally imperilled. They need expanses of habitat to live, eat and move, but civilised humans have not respected their livelihoods, have not recognised that wild animals morally count, and have not deigned to share the world equitably with Earth's non-human citizens.

It is, however, important to recognise the long history of this civilised posturing and its continuities with the modern moment. Otherwise, the ecological crisis, including defaunation, appears fully explainable by the consumption and demographic J-curve trends of the post-1950s 'Great

Acceleration'. Understanding a long history matters for discerning and divulging the deep causes of defaunation.

The new human that emerged with empire-building was, and is, the one with absolute power over the non-human realm, including the power of life and death over animals. The Roman Empire, for example, which spanned centuries and sizable geographic regions, installed a dominant motif for human relations to wild animals, who the Romans variously configured as property, commodities, foods, trophies, nuisances or entertainment. Regarding the last, millions of wild animals were trapped, traded and subsequently slaughtered in 'games' held across the empire over the span of centuries.⁹ The new human was trained in many ways, including through these gruesome spectacles that, in the West, the Romans institutionalised and bequeathed as forms of amusement.

That training of the human was a training into and about power, an affirmation of supremacy, a turning of heart to stone and a prolonged teaching about the expendability of animals – as well as of certain humans, since the constructed human-nature hierarchy included, in its very design, stratification of the human realm, too. The training into violence-asentertainment involved the induction of indifference before the suffering of the other, an inurement that became imbricated into history in sundry conventional relations of the elevated human with the denigrated animal. Yet this unequal power relation was eminently transferable, of course, to the inter-human domain, as many have noted, including critical theorist Theodor Adorno who wrote that 'the constantly encountered assertion that savages, blacks, Japanese are like animals, monkeys for example, is the key to the pogrom'. More generally, as Max Horkheimer put it, 'the history of man's efforts to subjugate nature is also the history of man's subjugation by man'. The subjugation by man'. The subjugation is training into and a prolonged teaching and a prolonged teaching about the story design, as well as of certain humans, and a prolonged teaching about the story design, as well as of certain humans, and a prolonged teaching about the story design, as well as of certain humans, and a prolonged teaching about the story design, as well as of certain humans, and a prolonged teaching about the story design, as well as of certain humans, and a prolonged teaching about the story design, as well as of certain humans, and a prolonged teaching about the story design, as well as of certain humans, and a prolonged teaching about the story design, as well as of certain humans, and a prolonged teaching as well as of certain humans, as well as of certain humans, and a prolonged teaching as well as of certain humans, and a prolonged teaching as well as of certain humans, as well as of ce

The hardening of human identity was supported and reinforced by an historical 'clinging with fanatical tenacity to the specialness of man'. ¹³ Yet the precarity of responding with indifference (or even hilarity) to another's suffering made such a heartless response tenuous – and promises to be its undoing. Roman philosopher Pliny the Elder reported an event illustrating the point. What happened involved enslaved elephants who were being subjected to some agony-unto-death in Pompeii's arena in 55 BC. Pliny the Elder wrote the story down some decades later, but the event was well-known by contemporaries and had apparently been retold innumerable times. ¹⁴

When ... the elephants in the exhibition given by Pompeius had lost all hope of escaping, they implored the compassion of the multitude by

2.00

EILEEN CRIST

attitudes which surpass all description, and with a kind of lamentation bewailed their unhappy fate. So greatly were the people affected by that scene, that, forgetting the general altogether, and the munificence which had been at such pains to do them honour, the whole assembly rose up in tears, and showered curses on Pompeius . . . ¹⁵

By breaking the frame of spectacle with their face-to-face entreaty to the assembled, the elephants opened a space of lucidity and a recognition of kinship. Their gesture could not immediately negate the doubly false reality under construction: degrading the dignity and integrity of animals and manufacturing human callousness towards that degradation. Nevertheless, the event was of the order of revelation and was therefore inscribed into historical memory, capable of invoking the same tears over two millennia later. Looking into the mirror of the animal is a shape-shifting experience: it uplifts and presences human beings in ways that sometimes can be worded and sometimes are ineffable. The profound reflection between human and animal, 'through the grace of its advents and the melancholy of its departures . . . leads you to that You in which the lines of relation, though parallel, intersect'. ¹⁶

Yet even a broken mirror is a looking-glass, albeit one reflecting a fractured face. When entertainment was foisted on the masses as eviscerations, beheadings and the slaughtering of animals and barbarians, and acrid sights, smells and sounds reverberated within a communal space, a gateway was opened to something that for lack of a better word we can call 'the demonic'. The demonic is a dimension of its own. With the irruption of that dimension into human reality, human beings did not 'fall'; nor did they become 'evil'. Rather, human beings became capable of living in the fallen state of tolerating some degree of evil, as well as of inventing strategies to avoid looking at evil's repulsive visage. Why does the public, for example, not only tolerate how farm animals are treated in industrial systems but even eat food made through animal abjection and suffering? When civilisation put the human on a pedestal, and ruptured the human mirroring with the plenum of living beings cohabiting the planet, the ensuing trauma morphed into conceding the demonic a degree of legitimacy in the world of affairs. In the case of factory farms - since they cannot be countenanced without extreme revulsion - windowless quarters and 'ag-gag' laws (prohibiting filming or photography in factory farms) are installed to manufacture a charade of invisibility.

Looking at the subjugation of the animal still promulgated by global civilisation, we can recognise that it is underpinned by a long-standing

worldview that separated and elevated the human. No aspect of this supremacy is inborn to human nature; rather, its ideology is lodged into the collective through social conditioning that starts at infancy and continues throughout the span of a human lifetime.¹⁷ This conditioning is all the more powerful for its numerous historical layers and discourses, reaching back (to rehearse some milestones) to the epic of Gilgamesh's triumphant deforestation, Aristotle's invention of the Great Chain of Being, the Bible's creation story and Descartes' mephitic implantation of doubt regarding animals' subjectivity and awake awareness.

A decisive culmination of the human–animal rupture is defaunation in our time, founded on 'Differential Imperative' narratives that have spread and taken root in human societies. 18 Ethically, politically, theologically and in daily practice, the human was constituted above and against the animal. Stories about Big differences between human and animal long posed as narratives of knowledge, insight and science. The animal has instinct; the human reason. The animal is mute; the human has language. The animal is without morality; the human has ethics. The animal lives in the now; the human in temporal extension. The animal perishes; the human dies. The animal is without contract; the human has politics. The animal was made on the fifth day; the God-like human on the sixth. The animal is for using: the human has dominion. The animal can be a means to an end; the human never. As geographer Stuart Elden notes, 'a distinction from animals becomes a way of ordering, regulating, controlling and exploiting them'. 19 Thus, by early modernity, animals became explicitly constructed as 'natural resources' or threats thereof: livestock, game, fisheries, vermin, pests or protein. Implacably, threading through a long history into the present, the animal has become banally killable.

The ascendancy of the distinguished human drove the annihilation of animals for centuries. The long-standing entrenchment of a supremacist belief-system, coupled with the expansion of formidable physical factors (which that belief system, in good part, gave permission to swell) – factors such as twenty-four/seven global trade, a huge and growing human population, amoral technological advancement and spread, and escalating consumption of food, water, energy and materials – has transmuted the obliteration of wild animals into global defaunation. The whole planet has gone into a rapidly declining ecological baseline, both driven by and driving the deterioration of wild animal life.

EILEEN CRIST

Defaunation in Our Time

Etymologically, holocaust means everything set on fire. Holocaust describes what is happening and experienced by many wild animals as populations and as species. Killing and agriculture are the principal drivers.²¹ Large herbivores, large carnivores and large fish are on the front line.²² Yet fish, reptiles, amphibians and invertebrates of rivers, lakes and wetlands are also afflicted by extinctions and massive declines. 23 Moreover, many birds, such as seabirds, migrating birds and parrots, are dwindling in numbers and threatened with extinction. ²⁴ Amphibians and bats are losing out to invasive pathogens. Insects are disappearing owing to industrial agriculture, and so are the animals who eat the insects; 40 per cent of insect species are in decline and one-third are endangered.²⁵ Tropical deforestation is the leading cause of species extinction.²⁶ If deforestation trends continue in Southeast Asia, for example, the region will lose 75 per cent of its forests and half its biodiversity by 2100.²⁷ Industrial fishing has demolished marine animal life into a faint echo of what it once was.²⁸ Climate change is altering ecologies too rapidly for animals to adapt; and, given widespread habitat fragmentation, wild animals are hard-pressed to move and survive.

With such a multi-scale, multi-causal onslaught on wildlife, it is no wonder that numbers have declined immensely – an average 60 per cent loss in the last fifty years.²⁹ The greatest losses have occurred in Central and South America, where 89 per cent of animal populations vanished in that time-period. Freshwater species have suffered severe global declines of 83 per cent since 1970.³⁰ Defaunation is this holocaust of animals. The wild ones are in retreat, their numbers plummeting, their ranges collapsing, many becoming nocturnal as a hiding tactic, others experiencing mass mortality events, while untold numbers of species are annihilated daily with an extinction rate estimated at 1,000 times faster than the fossil record.³¹

This holocaust is occurring because of the scope and scale of impact. It is purposeful: filling forests with snares and oceans with longlines.³² It is deliberate: stalking elephants, rhinos, big cats, pangolins and others for their body parts. It is masculinist: the spectacles/spectres of trophyhunting, shark- and coyote-killing contests, or shooting wolves from aircraft. It is depraved: catching turtles, tortoises, lizards, birds, seahorses and other critters for the 'pet trade'. It is collateral: climate change altering the hydrological conditions of amphibians and reptiles, favouring dangerous pathogens, warping the synchronisation of birds' fledgling feeding

2.02

with their food base, reducing the lichen that reindeer feed on, starving polar bears and so on. It is a way of life: plastic in the ocean kills an estimated 100 million animals a year - whales are beaching dead with stomachs full of plastic, while every sampled sea turtle corpse has had plastic in its gut. It is puerile: killing poisonous snakes from hate and fear. It is conventional: industrial fishing vacuuming the ocean of its living abundance, and this being regarded as 'normal'. It is gluttonous: bushmeat for wealthy markets, shark fins for tasteless but prestigious soup, bluefin tuna for sushi. It is traditional: hunting. It is institutional: the so-called Wildlife Services of the United States killing millions of animals every year so as to serve agricultural and other economic interests.³³ It is irresistible: the amounts of money to be made from selling pangolin scales or rhino horn. It is a conflagration: eliminating endemic rainforest animals for soy, palm oil or beef. And it is inexorable: agriculture, human settlements, forestry and other land-uses now occupy three-quarters of the Earth's icefree land and continue to expand.

Empty world syndrome is a world emptied of wild animals and the expansiveness of the places they inhabit and contribute to creating. In a different sense, though, the world is far from empty: the biomass of livestock and humans now comprises 96 per cent of the vertebrate biomass, leaving just 4 per cent to wild big animals. Farmed poultry accounts for 70 per cent of all bird biomass.³⁴ These figures nonetheless convey defaunation, conveying it by weight. In that context, the world is emptied of wild animals' physical presence. But it is also emptied of their signs – trails, dens, tracks, nests, burrows, lodges, cries and songs. A lush world inscribed by wild animals is a world moulded, designed and enriched by their inner lives: by their intentions, desires, instincts, plans, exuberances and engineering. It is a world filled not only with their bodies but with animal minds.

Defaunation thus empties the world of animal forms and whittles down the manifestations of animal consciousness that shape and ornament surroundings. Animals' landscaping, as well as their peregrinations and migrations, which once filled the ecosphere, were vibrant mindscapes, not simply biologically moulded matter. Alongside destroying biological kinds, natural habitats and animal populations, humanity is now diminishing Earth's wild noosphere, elaborated especially through animal emotions, intentions, understandings, perceptions and experiences – through varieties of awareness sculpting and adorning the living world. The world becomes de-animated, disenchanted, more predictable, less lively and more static and prosaic. Large animals, the ones in decline, contribute disproportionately to the distribution of nutrients across landscapes. Thus, the

EILEEN CRIST

decline of wild animals affects the world of plants: the soil that feeds the plants is less fertilised and less tilled, while plants' seeds, fruits and pollen are less widely dispersed. The plants experience the absence of their animal kin, but the dying away of plants is slower, while of plant suffering most of us know nothing. 'As we kill our fellow Earth creatures,' wrote Deborah Bird Rose, 'we make ourselves and the whole world more lonely, more empty than when we started.'³⁷

Facets of Humanisation

The humanisation of the planet is not a straightforward phenomenon; it is multilayered. Importantly, to speak of Earth's humanisation is not a misanthropic diagnosis, for humanisation constitutes a world impover-ishment that is abhorrent not only for non-humans but also to the full potential of human life – spiritual, experiential, aesthetic, relational and physical. At the coarsest layer, humanisation is about the seizure of land and seas, imposing formations of conquest inimical to life's diversity – industrial agriculture, industrial forestry, industrial fishing, burgeoning settlements, lethal incursions into wild natural areas, and sprawling technological systems and infrastructures.

At a more subtle layer, humanisation is about all the aforementioned impositions foregrounded into the perceptual and experiential field, while what is left of free nature becomes marginalised and backgrounded. When Martin Heidegger invited a comparison between the bridge and the dam on the Rhine, the politics of aesthetic experience is precisely what he was pointing to.³⁸ On the one hand, the bridge is integrated with the river and it enjoins the human to participate with the river's being. On the other, the dam is imposed on the river, politically decreeing that the river has been subjugated as a resource and aesthetically relegating the river's being as the dam's background. The bridge is about participation; the dam is about using. The bridge can be an ornament of the river; the dam is a show of mastery over it. Not coincidentally, the bridge does not afflict the river's beings (except during the building of it), but the dam afflicts the river and its beings in perpetuity.

At a biological level, Earth's humanisation produces a peculiar monoculture. Which non-humans live and survive, at some level of abundance, are those who humans favour (for example, domestic animals), those who can eke out a living at the interstices or expense of human life (for example, ticks or certain nocturnal mesopredators) and those who are omnivorous, versatile and otherwise 'generalist' (i.e. able to prosper under a range of conditions, for example rats). Other animals are geographically constricted, denied mobility, incarcerated in zoos and parks, reduced to low numbers, reconfigured as 'protein' (wild fish), facilely extinguished (especially if they are anonymous and still-undiscovered) and left at the mercy of the collateral damage of plastic, agricultural or industrial pollution and (increasingly) climate change.

Deeper yet, humanisation entrains the silencing of multitudinous signs of diverse others, with the manifestations of their consciousness erased. The landscapes and seascapes that were once numinous – animal-moulded fusions of mind and matter – are divested of that quality. The world remade as less self-illuminated better conforms to the dominant materialistic metaphysics, wherein being appears 'a cosmic accident, meaningless and mechanical'.³⁹ However, as philosopher Erazim Kohák understood and endeavoured to convey, the human-as-master becomes himself bereft, alongside the world deprived of its self-created luminous being. 'When we assume the posture of masters', Kohák wrote, 'proudly conquering the world, that posture . . . is our crushing burden, condemning us to loneliness in a world reduced to meaninglessness.'

At the level of phenomenology, Earth's humanisation ushers in the disenchantment of the world on physical and mental planes, through erasing or stripping down the great variety of wild non-human forms, minds and phenomena that precisely fashion an enchanted world. Disenchantment bolsters (and is subsequently reinforced by) the killiov cosmology of a mechanical, purposeless universe in which existence is a random and pointless event. On the other hand, enchanted cosmologies, such as the animistic perspectives of indigenous peoples, were nourished in witnessing bewildering tapestries of physical forms and forms of consciousness, as well as in the regularity of unexpected occurrences arising within such a plenum. Humanisation profoundly undermines the experiential grounding of enchanted cosmologies, thereby delivering them to unreality and sentencing them to appear obsolete, naïve, romantic, fantastic and unsubstantiated. Cosmologies in which everything brims with life force and personhood are, by the lights of a modern-rationalist perspective, literary and/or ignorant fabrications. Yet the 'arid wisdom' of the modern rationalist wherein there is 'nothing new under the sun' is utterly unreflexive about the man-made existential grounding of its own assessment – namely, a world impoverished through humanisation. 41 Moreover, animist cosmologies were and remain true, vested with the authority of the plenum.42

EILEEN CRIST

The humanisation of the world produces a false consciousness of the Earth and of the human. The supremacist human shapes the Earth's ontology as human-owned, and then assumes and inhabits that ontology as though it were normal, desirable, stable or just the way things are. Parallel to normalising the humanisation of the world, the supremacist identity that forged that ontology is reified – that is, the human conqueror appears as the 'natural human'. This constitutes a double danger for humanity – the danger of being swallowed up by a false consciousness of Earth and of itself. Defaunation is pivotal to this twin alienation, because an abundance of wild animals shapes a completely different planet while also making abundantly visible the reality of diverse minds. Wiping out wild animals secures Earth's hostile takeover and instals the consciousness of the conqueror into uncontested dominance. Thus, opposing defaunation by unmasking the human imperialism that sponsors it while simultaneously supporting eco-restoration, rewilding and wild animal reintroduction initiatives are not only acts of justice on behalf of Earth's non-human citizens⁴³; they are also acts of resistance to the oblivion into which humanity is in danger of descending by misconstruing a humanised Earth and a naturalised conqueror as ontological realities, rather than socio-historically constructed realities.44

Reanimating and Re-enchanting Earth

We can aspire anew for a world of reciprocity, communion and complementarity between humans and all other animals. A first step is to think *politically* about defaunation. Defaunation is a present-day epiphany of having represented animals (and all non-humans for that matter) as 'inferior'. That historical construction served as a bedrock for perpetual encroachments upon the natural world under the guise of being normal. Politicising the ordinariness of invading nature is to recognise nature's invasion as colonisation. While humanity has largely rejected the colonising project with respect to fellow humans, the occupation of non-human nature constitutes civilisation's last bastion of 'normal' colonialism.⁴⁵ A new humanity is bound sooner or later to recognise and overthrow a colonialism of 'nature', embracing a universal norm of multispecies justice.⁴⁶

Freeing the non-human world from subjugation and freeing human identity from being a subjugator go together. We do not live in the 'Anthropocene'; we live in a time where the destiny of the natural world, and who humans are destined to become, hang together in the balance.

Redressing defaunation and, more broadly, Earth's plight calls for willingly limiting ourselves in order to inaugurate a new human—Earth relationship. Over time, this will enable both the restoration of a biodiverse ecosphere and the emergence of a virtuous human civilisation. ⁴⁷ Embracing limitations means scaling down the human presence on demographic and economic fronts, by means of an ethos and policies that honour justice for all people. Embracing limitations further mandates pulling back from vast expanses of the natural world, thus letting the lavishness of wild (free) nature rule Earth again. ⁴⁸ 'Wildness is the patterning power', wrote naturalist Scott Russell Sanders, of 'lavish production: it is orderly, extravagant, inventive. Wildness coils the molecules of DNA; it spirals the chambered nautilus and the nebulae; it shapes the whorls on a fingertip, the grain in wood, the planes of cleavage in stone; it regulates the waves breaking on a beach and the beating of a heart; it designs the amoeba's flowing form, the zebra's stripes, the dance of the honeybee. ⁴⁹

Wild nature's patterning creates a profusion of material and spiritual gifts. It creates an abundance that humanity can inhabit by means of downscaling our physical presence and shrinking our geographical reach, for the sake of belonging with our Earth family. Letting wild animals flourish again is key to unleashing nature's bounty and to re-enchanting landscapes and seascapes.

Notes

- I. Val Plumwood, *The Eye of the Crocodile* [ed. Lorraine Shannon] (Acton: ANU E Press, 2012), p.79.
- 2. Eileen Crist, 'Ecocide and the Extinction of Animal Minds' in Marc Bekoff (ed.), *Ignoring Nature No More: The Case for Compassionate Conservation* (Chicago: University of Chicago Press, 2013), pp.45–61.
- Charles Darwin, 'A Posthumous Essay on Instinct' in George John Romanes, Mental Evolution in Animals (New York: AMS Press, 1883), pp.355–84;
 W. L. G. Joerg (ed.), Bering's Voyages. Volume II: Steller's Journal of the Sea Voyage from Kamchatka to America and Return on the Second Expedition 1741–1742 (New York: Octagon Books, 1968).
- 4. Barbara Smuts 'Encounters with Animal Minds', *Journal of Consciousness Studies* 8(5–7) (2001), 293–309 (p.302).
- Ibid.
- 6. World Wide Fund for Nature, 'Asian Elephants' (2019), wwf.panda.org/discover/knowledge_hub/endangered_species/elephants/asian_elephants/.
- 7. Marlee A. Tucker et al., 'Moving in the Anthropocene: Global Reductions in Terrestrial Mammalian Movements', *Science* 359(6374) (2018), 466–9.

- 8. Will Steffen et al., 'The Trajectory of the Anthropocene: The Great Acceleration', *The Anthropocene Review* 2(1) (2015), 81–98.
- 9. Michael MacKinnon, 'Supplying Exotic Animals for the Roman Amphitheatre Games: New Reconstructions Combining Archeological, Ancient Textual, Historical and Ethnographic Data', *Mouseion* 6 (2006), 1–25.
- Matthew Calarco, 'Identity, Difference, Indistinction', The New Centennial Review II (2012), 41–60.
- Theodor Adorno, Minima Moralia: Reflections from Damaged Life (London: Verso, 1978), p.105.
- 12. Max Horkheimer, The Eclipse of Reason (New York: Continuum, 1974), p.105.
- 13. Daniel Quinn, *Ishmael: An Adventure of the Mind and Spirit* (New York: A Bantam/Turner Books, 1992), p.146.
- 14. See Linda Kalof and Amy Fitzgerald (eds.), *The Animal Reader: The Essential Classic and Contemporary Writings* (Oxford: Berg, 2007), p.195.
- 15. Pliny the Elder, 'Combats of Elephants' [AD 75], in Kalof and Fitzgerald, *The Animal Reader*, pp.195–6 (p.196).
- 16. Martin Buber, *I and Thou* (New York: Touchstone, 1970), p.84.
- 17. Eileen Crist, Abundant Earth: Toward an Ecological Civilization (Chicago: University of Chicago Press, 2019).
- 18. John Rodman, 'Paradigm Change in Political Science: An Ecological Perspective', *American Behavioral Scientist* 24(1) (1980), 49–78; Crist, *Abundant Earth*.
- Stuart Elden, 'Heidegger's Animals', Continental Philosophy Review 39 (2006), 273–91 (p.284).
- 20. Rodolfo Dirzo et al., 'Defaunation in the Anthropocene', *Science* 345(6195) (2014), 401–6; William Ripple et al., 'Bushmeat Hunting and Extinction Risk to the World's Mammals', *Royal Society Open Science* 3 (2016), 160498.
- 21. Sean Maxwell et al., 'The Ravages of Guns, Nets and Bulldozers', *Nature* 536(7615) (2016), 143–5.
- 22. William Ripple et al., 'Status and Ecological Effects of the World's Largest Carnivores', *Science* 343(6167) (2014); William Ripple et al., 'Collapse of the World's Largest Herbivores', *Science Advances* 1(4) (2015); Christopher Wolf and William Ripple, 'Rewilding the World's Large Carnivores', *Royal Society Open Science* 5(3) (2018); Ransom Myers and Boris Worm, 'Extinction, Survival or Recovery of Large Predatory Fishes', *Philosophical Transactions of the Royal Society B* 360(1453) (2005), 13–20.
- 23. David Dudgeon et al., 'Freshwater Biodiversity: Importance, Threats, Status and Conservation Challenges', *Biological Review* 81 (2006), 163–82.
- 24. BirdLife International, *State of the World's Birds: Taking the Pulse of the Planet* (Cambridge, UK: BirdLife International, 2018).
- 25. Damian Carrington, 'Plummeting Insect Numbers "Threaten Collapse of Nature", *The Guardian* (10 February 2019); Freya Mathews, 'Planet Beehive', *Australian Humanities Review* 50 (2011), 159–78; Francisco Sánchez-Bayo and

- Kris A. G. Wyckhuys, 'Worldwide Decline of the Entomofauna: A Review of Its Drivers', *Biological Conservation* 232 (2019), 8–27.
- 26. Alexander Lees and Stuart Pimm, 'Species, Extinct Before We Know Them?', Current Biology 25(5) (2015), 177–80.
- 27. Ripple et al., "Collapse of the World's Largest Herbivores', p.5.
- 28. Callum Roberts, *The Unnatural History of the Sea* (Washington, DC: Island Press, 2007); Jeremy Jackson, 'Ecological Extinction and Evolution in the Brave New Ocean', *PNAS* 105(1) (2008), 11458–65; Douglas J. McCauley et al., 'Marine Defaunation: Animal Loss in the Global Ocean', *Science* 347(6219) (2015).
- 29. Damian Carrington, 'Humanity Has Wiped Out 60% of Animal Populations since 1970, Report Finds', *The Guardian* (29 October 2018).
- 30. Michael Gross, 'Can Vanishing Wildlife Evolve Back?', *Current Biology* 28(22) (2018), R1283–R1295.
- 31. Carl Safina, 'In Defense of Biodiversity: Why Protecting Species from Extinction Matters' (2018), e360.yale.edu; Gerardo Ceballos et al., 'Accelerated Modern Human-Induced Species Losses: Entering the Sixth Mass Extinction', *Science Advances* 1(5) (2015).
- 32. Thomas Gray et al., 'The Wildlife Snaring Crisis: An Insidious and Pervasive Threat to Biodiversity in Southeast Asia', *Biodiversity Conservation* 27 (2018), 1031–7; Ted Danson, *Oceana: Our Endangered Ocean and What We Can Do to Save It* (New York: Rodale, 2011).
- 33. Ashley Curtin, 'US Department of Agriculture's Wildlife Services Becomes Multi-Million Dollar Federal Wildlife-Killing Program' (2018), nationofchange.org.
- 34. Gross, 'Can Vanishing Wildlife Evolve Back?', p.R1284.
- 35. see Bernie Kraus, *The Great Animal Orchestra: Finding the Origins of Music in the World's Wild Places* (London: Profile Books, 2012).
- 36. Ripple, 'Collapse of the World's Largest Herbivores'; Gross, 'Can Vanishing Wildlife Evolve Back?'
- 37. Deborah Bird Rose, *Wild Dog Dreaming: Love and Extinction* (Charlottesville: University of Virginia Press, 2011), p.41.
- 38. Martin Heidegger, 'On the Question Concerning Technology' in *The Question Concerning Technology and Other Essays* (New York: Harper & Row, 1977), pp.3–35.
- 39. Erazim Kohák, *The Ember and the Stars: A Philosophical Inquiry into the Moral Sense of Nature* (Chicago: University of Chicago Press, 1987), p.183.
- 40. Ibid., p.81.
- 41. Max Horkheimer and Theodor Adorno, *Dialectic of Enlightenment* (New York: Continuum, 1972), p.12.
- 42. Graham Harvey, *Animism: Respecting the Living World* (New York: Columbia University Press, 2006); Jerry Mander and Victoria Tauli-Corpuz (eds.), *Paradigm Wars: Indigenous People's Resistance to Globalization* (San Francisco: Sierra Club Books, 2006).
- 43. Philip Seddon et al., 'Reversing Defaunation: Restoring Species in a Changing World', *Science* 345(6195) (2014), 406–12; Callum Roberts et al.,

EILEEN CRIST

'Marine Reserves Can Mitigate and Promote Adaptation to Climate Change', *PNAS* 114(24) (2017), 6167–75; Eric Dinerstein et al., 'An Ecoregion-Based Approach to Protecting Half the Terrestrial Realm', *BioScience* 67(6) (2017), 534–45; Christopher Wolf and William Ripple, 'Prey Depletion as a Threat to the World's Large Carnivores', *Royal Society Open Science* 3(8) (2016).

- 44. Helen Kopnina et al., 'The "Future of Conservation" Debate: Defending Ecocentrism and the Nature Needs Half Movement', *Biological Conservation* 217 (2018), 140–8; Crist, *Abundant Earth*.
- 45. Tom Butler, 'Protected Areas and the Long Arc toward Justice' in George Wuerthner, Eileen Crist and Tom Butler (eds.), *Protecting the Wild: Parks and Wilderness, the Foundation for Conservation* (Washington, DC: Island Press, 2015), pp.ix–xxvii.
- 46. A. Treves, F. J. Santiago-Ávila and W. S. Lynn, 'Just Preservation', *Biological Conservation* 229 (2019), 134–41.
- 47. Crist, Abundant Earth.
- 48. Harvey Locke, 'Nature Need Half: A Necessary and Hopeful New Agenda for Protected Areas', *Parks* 19(2) (2013), 13–22; E. O. Wilson, *Half Earth: Our Planet's Fight for Life* (New York: W.W. Norton, 2016).
- 49. Cited, Tom Butler, 'Rewilding Ourselves, Rewilding the Land', *Wild Earth* (1999), 7–8 (p.7).