

The enduring and elemental importance of natural history

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Natural history – a practice of intentional focused attentiveness and receptivity to the more-than-human world, guided by honesty and accuracy – is the oldest continuous human endeavour. In the evolutionary past of our species, the practice of natural history was essential for our survival, imparting critical information on habits and chronologies of plants and animals that we could eat or that could eat us. Natural history continues to be critical to human survival and thriving. It contributes to our fundamental understanding of how the world works by providing the empirical foundation of natural sciences, and it contributes directly and indirectly to human emotional and physical health, thereby fostering healthier human communities. It also serves as the basis for all conservation efforts, with natural history both informing the science and inspiring the values that drive these.

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The Earth needs natural history – the practice of falling in love with the world – now more than ever. This process of careful observation, description and comparison – paying attention to the larger-than-human world – makes us better, more complete human beings. Natural history helps us see the world, and thus ourselves, more accurately. It humanizes and grounds us, fostering curiosity, wonder, imagination and empathy. Natural history animates our sense of belonging and reciprocity, thus promoting our conscious, respectful relationship with the rest of the world, and I believe that it encourages us to build better human societies, ones that are less dysfunctional and less destructive to each other and to our non-human kin. When we engage in this practice of attentiveness, we reaffirm our commitment to nurturing hope.

Natural history – “a practice of intentional focused attentiveness and receptivity to the more-than-human world, guided by honesty and accuracy” (Fleischner, 2001) – cultivates receptivity to revelation. This attentive practice can involve watching birds at a backyard feeder or in alpine tundra; tending the garden or observing old growth forests; sketching flowers, watching butterflies or counting migrant hawks. In short, natural history involves mindful observation. Natural history, then, is as much a verb as a noun – a practice, something we *do*. And attention, as the Buddhist psychologist John Tarrant (1998) has pointed out, is the most basic form of love.

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About two thousand years ago a Roman scholar and philosopher, Pliny the Elder (1991), assembled the first ever encyclopaedia, and in the process coined the term *natural history*. This monumental work was titled *Historia Naturalis*, typically translated as “natural history.” It consisted of 37 books in ten volumes, covering everything from plants to animals, from rocks on Earth to stars and planets in the heavens, from art to mineralogy, from ethnography to mathematics. In short, it was an attempt to capture all that was known about the world at the time – an ambitious, comprehensive presentation of how the world works.

Substantial confusion exists because of the common translation of *historia* as “history” – leading many to assume that natural history is concerned only with the past (a view amplified by the prominence given to dinosaurs in many museums). But in Latin (and contemporary Spanish), *historia* has two meanings: “history,” but also “story.” A perusal of Pliny’s 37 books makes clear that when he coined this term he was concerned with far more than past events. In many ways, then, a more accurate and telling translation would be “the story of nature.” At any given moment, in any given place, nature offers a boundless array of stories. Natural historians can follow their own instincts, inclinations and interests to trace narratives of the living world.

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We’re all wired to do natural history. Human beings are designed by natural selection to practise it: our senses, our limbs, our whole bodies have evolved for attentiveness. No wonder – our survival has wholly depended on our capacity to pay attention to the encompassing living world, full of threats, foods and delights. Paul Shepard (1998a: 12; 1998b: 51–66) and others have proposed that the very nature of the human psyche, or mind, is a result of natural history practice – discerning predator from prey, poison from food, and so on. Natural history, then, is the oldest, continuous human endeavour (Fleischner, 2011a). In fact, there have never been people without natural history. Throughout human history and “prehistory,” attentiveness to nature was so completely entwined with daily life and survival that it was never considered as a practice separate from life itself. As Barry Lopez (in Lueders [1989: 22]) pointed out:

“Natural history has served for forty thousand years at least – it’s as old as the history of coherent narrative, as old as the history of the interaction of people with landscape – as a reminder of the breadth of the universe and the inability of the individual mind to encompass what is known or what can be known.”

And yet, there has never been a time in the history of our species when such a small proportion of people practised natural history – we live amidst the greatest dearth of natural history in human history. We have come to see the world as a funhouse built of human mirrors, where we see narcissistic distortions of ourselves. Indeed, as we grow older we learn – or are taught – to *not* pay attention to our world (Brusca, 2024). The advertising industry and mass consumer culture collude to encourage this shrinking of the scope of our attention – this squashing of our curiosity, our inquisitiveness, and our bold, direct exploration of the world. We have witlessly traded immersion in the endlessly engaging richness, depth and diversity of the living world for portrayals of a tiny subset of experience, often on small, two-dimensional screens – which diminishes our overall capacity for perception (Sewall, 2012). Without attentive immersion in the larger-than-human world – the exact immersion for which we are biologically adapted – we dissolve into individual and collective malaise. The current gush of social dysfunctions – violence, depression, anxiety, alienation and lack of health in so many ways – coincides with this mass sacrifice of human interaction with nature.

But natural history attentiveness is inherent in us, and it can be reawakened readily. If anyone doubts that we are all born to practise natural history, just watch any small child anywhere in the world. We turn over stones; we crouch to look at insects crawling past; we turn our heads to listen to new sounds, to witness the passage of birds.

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Natural history helps us to see the world accurately. Careful observation and description – the cornerstones of natural history – are the basis for all good science. Natural history is the process by which we gather information and insight about the world in which we live. It plays an especially critical role for ecology, by helping scientists answer four key ecological questions: *Who? Where? When? And how many?* In so doing, it helps us find areas of high diversity, for example, or patterns of migration, locations of rare species, and much, much more. Empirical observations provide the framework upon which integrative theories can be draped. Theories – which are highly prized in academia – are only as valuable as the natural history observations on which they are based.

Charles Darwin (1863) once wrote in a letter to a friend, “Accuracy is the soul of natural history.” Accurate natural history undergirds all theoretical advances in understanding the world. Darwin investigated the equatorial desert islands of the Galápagos archipelago; Alfred Russel Wallace explored the lush tangle of tropical forests in Amazonia and Malaysia. Both naturalists then independently described the patterns of variation they observed and worked

out the theory of evolution through natural selection; the world was forever changed by their insights. Entomologists crawling on hands and knees, tracking movements of ants, ponder theories of sociobiology (Wilson, 1975; 1994). Geologists, sweating in dusty desert mountains, tracking fault lines and stratigraphies, contribute to a unified theory of plate tectonics (Oreskes, 2002). And geneticists, peering through microscopes, unravel the human genome. Every worthy science arises from a sturdy foundation in the careful observation and description of natural history.

Conservation, too, has always depended directly on natural history. How can we save populations or species from declines and extinction if we don't know where they are, or how many individuals they comprise, or, even, that they exist? How can we prioritize natural ecological communities for protection if we haven't mapped patterns of vegetation? Without detailed natural history information, a species cannot be nominated for protection under the US Endangered Species Act, and similar considerations apply elsewhere in the world. The earliest formal conservation policy in the United States was the regulation of hunting seasons – closures motivated by natural history observations of decreasing “game” populations (Trefethen, 1975). Every conservation issue involves an interaction between three realms: science, values and policy (Fleischner, in Jones *et al.* [2010]). Natural history *informs* the science and *inspires* values that favour conservation of nature – hopefully leading to wise policies. The sense of wonder generated by natural history can predispose field scientists to a lifelong commitment to conservation (Fleischner, 2005).

While the remainder of this article explores, for the most part, the myriad benefits of natural history for humans, its importance for conservation and biodiversity protection – doing right for all our non-human kin – cannot be overstated.

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Natural history is good for us. I mean this quite literally: we are physically and emotionally healthier when we pay attention to nature. “Nature Deficit Disorder,” a term coined by Richard Louv (2005), focused public attention on the notion that immersion in nature is essential for human health. The idea garnered some persuasive power by utilizing the jargon of medical science – “deficit,” “disorder.” As yet, there's no formal medical disorder, nothing listed in the *Physician's Desk Reference*, concerning lack of nature. But there should be. When one reads what's buried in the technical verbiage of professional journal articles, it's stunning how remarkably healthy that time outdoors turns out to be. Again and again, the conclusion in a wide variety of psychological and medical studies – published in such respected journals as the *Proceedings of the National Academy of Science*, the *Journal of Experimental Psychology*, *Environmental Health and Preventative Medicine*, the *Journal of Cardiology*, to name just a few – is that it's simply healthier, both physically and emotionally, to spend time outdoors than in more human-dominated urban settings, to

walk in forests rather than along city streets (Fleischner, 2017; Fleischner and Sewall, 2020).

The bottom line from the rapidly exploding scientific literature, in a wide variety of peer-reviewed studies in cognitive and medical sciences: nature is good for us. The documented benefits of what healthcare professionals now sometimes refer to as “nature therapy,” “forest therapy” or “forest bathing” – simply put, being outside – are striking and diverse. On the whole, people who spend time outside have less stress, improved memory, stronger immune systems, better vision, increased creativity and problem-solving capacities, reduced inflammation and improved concentration; and they are, well, happier. Immersion in nature reduces stress, and this can be measured by standard physiological metrics like heart rate, heart rate variability and blood pressure (Fleischner, 2017).

Attentiveness to the world around us engenders humility and open-mindedness. Humility is especially easy to grasp when encountering a grizzly bear, catching a glimpse of a long animal migration or witnessing a plant thriving in the harshest of habitats. But it also comes simply from, say, a canyon wall’s reminder that the Earth was here long before us, and will persist long after. Or simply by watching a bird visit the ledge outside our urban apartment, or new flowers growing in sidewalk cracks. Natural history combats arrogance, tackles despair. It humanizes and grounds us by offering a larger perspective on the world. Humility – so sorely needed in our social and political discourse – can only be taught through modelling. Some human elders do a fine job of this. But immersion in the complexity, the unpredictability, and, occasionally, the ferociousness of the natural world almost always teaches humility – that all too rare human trait, which is absolutely essential for building sustainable human cultures (Fleischner, 2017).

Natural history makes us healthier as individuals and, collectively, as societies. Engagement with the beauty and power of nature brings out our best behaviour, supports our best selves. When we love the world we can love ourselves. And vice versa (Fleischner, 2017). A society comprised of naturalists – those who learn directly and broadly from more-than-human nature – is less myopic and less inclined to believe in the myth of human supremacy (Wessels, 2013). The practice of natural history connects us to the particulars of place, making the world less homogenous and abstract, and more interesting. The engagement, affection and sense of compassion that flows from attention to these particularities of place and organism promote an ethic of stewardship and compassion.

Ultimately, natural history is a *spiritual* path. One commonality of virtually all spiritual and religious traditions is that they try to break us free of our small minds toward a more expansive sense of ourselves and the world. Natural history provides a simple, time-tested protocol for developing awareness of something much larger than ourselves: pay attention to what’s going on around us. We might observe the everyday wonder of a finch building a nest, a new green shoot pushing through still-cold soil in spring, a sudden wind ruffling the branches of the tree outside the window, the stillness of the

mountain in the doorway. These and countless other mundane miracles can shift us into alertness, remembering what a gift it is to live in this wild, bountiful world.

Mindfulness is a crucial element of many spiritual traditions. Mindfulness practices of all traditions share three characteristics: a commitment to developing the capacity to pay attention; an object or ally to pay attention to (typically, one's breath); and a focus on in-the-body rather than out-of-body experience. The first notion – developing skill at paying attention – is fully concordant with any definition of natural history. But some advocates of mindfulness have concentrated on the importance of interior reality, while neglecting that which occurs outside. When considering mindfulness, we should erase the false boundary between inwardly and outwardly directed attention. Natural history and mindfulness are two surfaces of the same leaf, a seamless merging of attentiveness outward and inward, toward the interwoven realms of nature and psyche (Fleischner, 2011a). Recognition of the essential permeability of the “self” and larger “ecological self” unifies mindful practices directed toward inner and outer landscapes.

Natural history represents a practice of compassion, of “feeling with.” Too often, people – even those predisposed toward conservation – lump all of non-human life into one amorphous bundle, and label it “nature.” This is good as far as it goes, but “nature” hides at least as much as it illuminates. We tend to have our deepest compassion for *individual* beings, not for general categories. Mother Teresa took on mass hunger by looking each person in the eye, as she lifted a ladle to their lips. Look into enough eyes and some sense of caring for humanity as a whole can emerge. The same goes for “nature”. We need to watch an individual bird struggle to stay warm as she fluffs up against swirls of snow, or contemplate the purple gentian flower blooming an inch above the grassland of the high Andes, tenaciously clinging to the ground as a fierce wind knocks human observers to their knees. Watching a particular bird sing – *this* redwing, from this fencepost – or a particular flower blossoming... *this* lavender jewel we call *Penstemon*... helps us transcend the vague notion of “nature,” or, worse yet, “the environment,” and replaces it with texture, depth and a realm of specificities. And in the process, *awe* suffuses our beings – from the simple recognition that something like a paradise tanager actually *exists*. If this expansion of consciousness is not a spiritual practice, I don't know what is.

Natural history is also ultimately political, in that its practice shifts relationships of value and power. When we fall in love with some particular plant, animal or place, something shifts in the way we relate to the whole world. We foster this falling-in-love in ourselves first. Then, love by love, friend by friend, story by story, we engage others – and we just might make a brand-new world. Natural history is inherently honest and transcends ideologies.

We humans understand the world through stories: we are a storytelling and a story-listening species (Lopez, 1988: 61–71). But oftentimes important ecological and conservation stories are not told in the most compelling ways, or in the ways that are accessible to the general public around the world.

Natural history *reanimates* the world by adding sensory details and living vibrancy, and making real what is at stake when we talk about something like “sustainability.” Compelling ecological stories are usually rooted in natural history in one form or another. *This hawk who landed on the branch behind my house, songbird in his talons; these exceptional floral colours nodding in the desert wind after a wet winter.* Natural history stories *serve* us and they connect us both with the biodiversity in which we live, and also with one another by deepening our understanding and fostering compassion. Natural history provides *better stories* – ones that can help guide us out of our current mess. Stories that are more useful and accurate, less self-absorbed and narcissistic: stories of relationship, of sharing space, of adaptation, of perseverance.

The importance of natural history to science and conservation, as discussed earlier, has been widely recognized (e.g., Greene, 1994; 2005; Herman, 2002; Tewskbury *et al.*, 2014). But how does natural history affect the lives of individuals who practise it? After teaching natural history for more than two decades I began to ask learners this question at the end of field courses or workshops: *How has natural history changed you, if at all?* There has been remarkable similarity in responses over many years, amongst adult learners from college age to 80 and beyond. Among the often-mentioned gifts of natural history: awe; a sense of relationship and connection; humility; gratitude; greater capacity for sympathy and empathy; emotion and feeling; renewed energy. One thing that has been striking about these commentaries is the lack of statements about the personal importance of gaining new information or gathering facts – though, no doubt, that has enlivened and enriched all these naturalists’ lives, too. But when asked to reflect on how we have been most affected by natural history practice, most of us think first about how it changed what kind of people we are, much less about gaining knowledge, *per se*.

Bottom line: natural history makes us healthier as individuals and, collectively, as societies (Fleischner, 2011b). Natural history expands our sense of self into one of an ecological self and helps us to clarify our ecological identity (Thomashow 1996), by encouraging us to engage with nature – any place we can be in meaningful kinship with other species. Love for our biologically and culturally diverse world is a fundamental virtue and imperative. Humans are born to practise natural history – simply put, to pay attention to nature – and we are physically, emotionally and socially healthier when we do.

And, not least, it’s a whole lot of fun.

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