

Deep Ecology and the Future of the Wild in the Anthropocene

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Merely having the idea is not sufficient to guarantee its success. The dozens, the hundreds, the thousands of good ideas out there all have to undergo some sort of selection process.

— D. L. Smail, *On Deep History and the Brain*¹

What, then, is the fate of Deep Ecology?

— M. Oelschlaeger

INTRODUCTION

The day (March 31, 2014) I received the call for papers from *The Trumpeter*, the *New York Times* featured an article detailing the latest report of the IPCC on the reality and the effects of climate change. Strange coincidence? I think not, as most media run daily stories on the continued ravaging of the Earth. So *cumulatively consequential* are the human impacts on the planet, including species and habitat, bio-chemical processes, oceans and atmosphere, and so on, that geologists argue that the Earth has entered a new age, essentially the climax of the Holocene: the Anthropocene.

My use of the word “Anthropocene” is as *a term of art*, especially as used by professional geologists, and not as used by neogreens, new conservationists, or eco-pragmatists as a justification for human dominion over and management of the evolved and evolving Earth. The unsettling reality of the Anthropocene has generated a veritable firestorm of argument and counter-argument within what might loosely be called the environmental movement, recognizing that there are as many flavors within “the movement” as there are in a Baskin-Robbins ice cream parlor. The firestorm of argument has generated articles both popular, as in *The New Yorker*, and academic, as in the journal *Conservation Biology*, as well as books, such as *Keeping the Wild: Against the Domestication of Earth*.² Seemingly, in this context, a host of interesting questions about the meaning of the past, present, and future of deep ecology

¹ Daniel Lord Smail, *On Deep History and the Brain* (University of California Press, Berkeley: 2008), 83.

² See D. T. Max, “Green is Good,” *The New Yorker* (May 12, 2014), 54–63; Tim Caro, et al. “Conservation in the Anthropocene,” *Conservation Biology* 26 (2012): 185–88; and George Wuerthner, Eileen Crist, and Tom Butler, eds., *Keeping the Wild* (Island Press, Washington, DC., 2014).

(hereafter “DE”), are raised. I will raise some of these questions in the conclusion.

Setting deep ecology in geological context, that is, into a continuum of time – deep time – that subordinates human time is the immediate task. Why do so? Simply put, cultural time overwhelms any sense of geological or deep time. Subsequently, the narrative turns to Deep Ecology in the 21st Century, a phrase which partially mirrors the felicitous title of George Sessions’ edited collection of papers published in 1995.³

Is such an effort worth the candle? Why think, as Smail’s epigraph implies, that Deep Ecology has anything to offer by way of constructive solution/ameliorative change to the myriad complex problems that are pushing cultural and natural systems towards collapse? Can any plausible argument be made that DE is anything more than a paradigmatic framework for discussion among a coterie of insiders who speak the language? Is DE actually a world view with legs, that is, one that might by fits and starts carry humankind towards a sustainable world, with thriving wilderness and biodiversity, appropriate technologies, social justice, discursive political processes, economic sufficiency, and global peace? And what selection process might decide the winner from the vast ideational melange?

Asserting that DE does have “the goods” is a challenge. Consider that Gustav Speth persuasively argues that environmentalism to date has been amounted to little more than band-Aids applied over arterial wounds. Jørgen Randers, an *éminence grise* in the field of systems thinking as applied to environmental dysfunction, has become cynical about even the possibility of sustainability. And, perhaps worst of all, one of the world’s most distinguished scientists, Sir Martin Rees, who holds the chair once held by Sir Isaac Newton, believes that even IF humankind makes appropriate policy decisions addressing complex problems, then the likelihood that civilization will endure for a century is no more than fifty-fifty.⁴

What then to make of Deep Ecology? My argument in what follows is simple: more than anything DE is the harbinger of the future, the dawning awareness/consciousness that humankind is of and about the Earth. In one sense, then, DE offers precious little, for science alone establishes humankind’s evolutionary lineage beyond any doubt. Further, no one can plausibly argue that DE, even if it enjoyed cognitive and political hegemony, will realize its goals in the near term future. And yet in another sense, if the Anthropocene is the dark of midnight,

³ George Sessions, ed., *Deep Ecology for the 21st Century: Readings on the Philosophy and Practice of the New Environmentalism* (Shambala Publications, Boston: 1995).

⁴ See James Gustave Speth, *Red Sky at Morning: America and the Crisis of the Global Environment* (Yale University Press, New Haven: 2004); Donella H. Meadows et. al., *Limits to Growth: the 30-Year Update* (Chelsea Green Publishing Company, White River Junction, VT: 2004); and Martin Rees, *Our Final Hour: A Scientist’s Warning* (Perseus Books, New York: 2003).

the outcome of the inevitable contradictions of Modernism, then DE is the beginning of the dawn. History itself will render the final verdict.

DEEP ECOLOGY AND THE ANTHROPOCENE

The Anthropocene, *as a geological age* (and term), is easily defined: the *anthrosphere*, the totality of human actions, including industrial technology and production processes, has become the short-term, dominant influence on naturally evolved ecosystems and planetary processes. For example, E. O. Wilson noted more than two decades ago that humankind has initiated an extinction spasm that, as with other such mass extinctions, will profoundly diminish the diversity of life. To take another example, John Firor, former Director of Research at NCAR, carefully delineated the anthropogenic forces radically altering an atmosphere evolved over hundreds of millions of years, including the depletion of stratospheric ozone and increase in atmospheric carbon dioxide.⁵

No one who has looked beyond the end of her or his nose needs be reminded that the polar ice caps are melting, that oceanic currents are being disrupted, that ocean warming is precipitating increasingly frequent and violent hurricanes, or that coral reefs are collapsing. Nor can we forget the facts that old growth forests and wetlands are disappearing at unprecedented rates, that unusual 100 and 500 year events, such as record rains and flooding, and droughts and wildland fires, have become the norm. In sum, while the human footprint is ecological, it's also geological, impacting oceanic and atmospheric systems, habitats, flora, and fauna evolved over millions, tens of millions, and hundreds of millions years.

Somewhat ironically, the reality of the Anthropocene offers a useful context for understanding deep ecology in a larger context, a story grounded in the longuers of space and time. At the risk of sounding too much like Neil deGrasse-Tyson or Carl Sagan, let me undertake a narrative segue into so-called Deep History.

I begin this journey into Deep History (DH) with an event that, for many if not most who are following along on these pages, is more an artifact of history rather than a historical moment burned into consciousness: namely, the August 1969 Woodstock Music and Arts Fair, simply known as Woodstock. Among the many performers was the group, Crosby, Stills, Nash, and Young, who sang what became for many an anthem for the counter-culture: "Woodstock."

⁵ There are hundreds if not thousands of books and professional articles, especially in geological journals, on the many dimensions of the Anthropocene. Among geologically inclined analyses, see George A. Seltz, *Dawn of the Anthropocene: Humanity's Deciding Moment* (American Geosciences Institute, Alexandria, VA: 2012). On anthropogenic mass extinction see E. O. Wilson, *The Diversity of Life* (Harvard University Press, Cambridge, Mass.: 1992). On atmospheric disruption see John Firor, *The Changing Atmosphere: A Global Challenge* (Yale University Press, New Haven: 1990).

Written by Joni Mitchell, the song contains the three-times repeated refrain, “We are stardust, we are golden, we are billion year old carbon, and we got to get ourselves back to the garden.”

Astrophysically considered, the time frame of a billion years is several billion years short. But the basic point that all earthlings, indeed, the solar system itself, are the products of cosmic evolution is spot on. The basic building block of organic life is carbon, which itself is created by fusion deep in the bowels of fiery stars as a byproduct of the consumption of hydrogen. Literally billions and billions of so-called first generation stars have completed the entirety of their life cycle, and spewed their elemental remains, including carbon, iron, oxygen, and the other members of the periodic table, into the cosmic wilderness.

Over additional tens of millions years, those elements along with hydrogen are recombined through the action of gravity into what are termed proplyds, that is, proto-stars, which ultimately become second generation stars. Along with star formation, solar systems are also created. Interestingly, by looking at the dagger in Orion’s belt we are essentially observing that process at a large scale. That vast cloud of hydrogen that forms the visible dagger is in actuality a stellar nursery, nurturing infant stars and solar systems. We owe our insight into the inner workings of the Orion nebula to the Hubble Telescope, as important to our time as Galileo’s telescope was to his.

As a life-long amateur star gazer who has spent countless hours wandering in the starry sky at night I must, despite my urge to continue this story, return to the task at hand. Thus, long story short, according to the science of today, Deep History begins approximately fourteen billion years ago, and concludes with emergence of carbon-based sentience (us) that is capable of grasping, however provisionally, the wild mysteries of evolution. If we imagine the entirety of cosmic history in terms of one year, our species appears in the last moment of the last day. One must wonder how can a cosmic ephemera such as us upset the applecart of 4.4 billion year planetary history, itself set in a somewhat longer history of the solar system?

A brief examination of geological time makes clear how almost virtually instantaneous the anthropogenic disruption of Gaia is. The University of California Museum of Paleontology website offers insight into the geological time scale, which includes eons (the largest time unit), eras, periods, epochs, and ages.⁶ The first macroscopic life forms appear some 542 mya. Since then five catastrophic extinction events have occurred, the most familiar being the so-called Cretaceous extinction event some sixty-two million years ago. Each of these extinction spasms were due to natural causal forces, such as the asteroid that precipitated the Cretaceous

⁶ See “Geologic time scale,” University of California Museum of Paleontology <http://www.ucmp.berkeley.edu/help/timeform.php>; accessed 26 February 2015.

extinction. Of course, there were no hominids until relatively recent history, and our own species dates to no more than 150,000 ybp.

Geologically positioned, modern humans live in the Holocene Epoch, also called the Anthropocene, which begins approximately 11.7 thousand years ago, effectively the end of the last Ice Age. All of human history, as distinct from prehistory, is included within the Holocene. Mathematically, ignoring prehistory, the Anthropocene covers .000022 percent of the time since the appearance of macroscopic life. Obviously, on that time scale, the anthropogenic mass extinction event presently underway is virtually instantaneous.

The causal fabric of the Anthropocene can partially be teased apart by using Paul Erhlich's I = PAT formula, a false numeric but nonetheless excellent overview of the drivers of catastrophe. "T" in the formula represents technology, ranging from the some 75,000 human created chemicals that were not present in our evolutionary environment, including among others such chemicals as CFCs and DDT, the energy producing technologies spewing millions upon millions of tons of carbon dioxide into the atmosphere, and the agricultural technologies that temporarily forestalled Malthusian predictions.

"P" in the formula, as we all know, represents human population, which according to some estimates ranged as low as a few thousand as the Pleistocene grasslands collapsed at the end of the Ice Age, to seven billion at present. The sheer number of humans has led to various characterizations, such as Erhlich's "population bomb," E. O. Wilson's "ecological aberration," and D. Foreman's "Man Swarm."

"A" stands for affluence, which basically refers to the economic demands of a population for the goods and services that are measured by conventional economic metrics, particularly the GNP and the rate of economic growth. As the world stands at present, the so-called G-7, the world's developed nations constituting about one-third of the global population, are the big hogs at the quantity of life trough, while the so-called developing/under-developed nations want nothing more than to achieve similar economic standards of living. Various study groups have calculated that in order to provide G-7 standards of living for all would require four planets like Earth.⁷

While academic criticism of the IPAT formula abounds, noting among other features that there is no common metric across the variables and that there are nonlinear interactions among P, A, and T, the basic overview is accurate. Ever increasing numbers of human beings with ever rising demands for affluence using technologies that generate ever increasing secondary effects are a

⁷ See Lester Brown: <http://www.worldwatch.org/mission>. Brown's annual "State of the World" reports offer detailed analysis of an humanly abused planet and insightful policy recommendations that promote sustainability.

recipe for planetary disaster. One metaphor dating back to the 20th century is that of the jet that, as it flies, is being disassembled, rivet by rivet. A more vivid metaphor is that of Kenneth Boulding, who proposed the term Spaceship Earth some five decades ago, arguing among other things that the ship has a finite carrying capacity. In terms of human population that capacity has been calculated as no more than two billion, living life styles that are qualitatively richer and quantitatively smaller than are characteristic of the world's "haves."⁸

While Parson Malthus (1798) is perhaps the first to warn of the consequences of growing populations, an even more comprehensive account of the path to the present was argued by George Perkins Marsh in two books, *Man and Nature*, published 1864, and ten years later, *The Earth as Modified by Human Action*. These texts essentially traced the fateful path that humankind was on, observing that humans were irreversibly altering landscapes to the detriment of culture and nature much as the ancients, such as the Egyptians and Sumerians, had done.

Despite Malthus and Marsh, the many environmental luminaries of the 20th century, such as Arne Naess and Aldo Leopold, the ever mounting body of scientific evidence that environmental catastrophe is probable, and "global initiatives" (although I hesitate in using that term) such as Agenda 21, humankind has collectively rushed headlong into the Age of the Anthropocene. The Anthropocene, as noted, is the climax of the Holocene, the Age of Man that extends some 12,000 years BP. Enter Deep Ecology.

DEEP ECOLOGY IN THE 21ST CENTURY

As the millennium approached, a number of remarkable books were published, including the George Sessions edited collection, *Deep Ecology for the 21st Century*, and Paul Kennedy's *Preparing for the 21st Century*.⁹ Kennedy makes clear that predicting outcomes in the 21st century is not possible because of complexity and uncertainty: "complexity" in the sense that the interactions of cultural and natural systems are chaotic/nonlinear, far from equilibrium, and "uncertainty" in the sense that the actions taken by governments, corporations, and individuals, and the consequences of these actions, cannot be predicted. Nonetheless, as Arne Naess asserts in concluding Session's volume, deep ecologists must keep the faith that constructive, ameliorative changes leading to sustainability, social justice, and peace are possible, whatever the difficulties in realizing them. True enough, no doubt, as pessimism is a self-fulfilling prophecy.

⁸The calculation comes from David Pimentel's 1999 study: <https://sites.google.com/site/biofuelgenocide/pimentel-david>.

⁹Sessions, *Deep Ecology*; Paul Kennedy, *Preparing for the 21st Century* (Random House, New York: 1993).

Perhaps there is utility in thinking of deep ecology in the 21st century in three ways:

1. DE remains a somewhat esoteric philosophy/world view shared among a relatively small population of academics and activists who engage in what is a “closed” social discourse (for example, the contributors to and readers of *The Trumpeter*).¹⁰ There is *little or no evidence* that DE has promoted widespread changes facilitating sustainability, social justice, or peace. And, given the complexity and uncertainty of the near future, there is little reason to think that DE has either the paradigmatic resources or widespread popular support adequate to analyzing and facilitating adaptive change leading to sustainability.
2. DE historically marks the dawning awareness that Gaia lives and that humankind is a vital organ in that web of life. Prospectively, DE serves as a strange attractor perturbing a complex, far-from-equilibrium cultural system in ways that might increase the potential for sustainability. Perturbations introduced by DE span the entirety of human endeavor, from theater and poesy to science, engineering, and philosophy.
3. DE settles into an Aristotelian middle-ground between numbers one and two above.

My position is similar to that of Dolores LaChapelle, a wild woman of the San Juans. “Nothing can be changed,” she would say to the group gathered for the annual deep ecology workshop. “But everything is possible.”¹¹ So construed, the data for coming to judgment on DE are not in. But the reality of the Anthropocene, despite foreknowledge that the present path is self-defeating, implies that nothing can be changed, or is at least not likely to be changed.

Thus, the first alternative above is seemingly true, especially when framed in terms of discourse theory that looks closely at who is talking to whom. In other words, despite the intellectual and ethical rationales that energize the DE community, DE lacks the legs to engender widespread ameliorative agency. No matter how trenchant an idea such as DE, there is little likelihood that its transformative potential will be actualized on either a temporal or spatial scale that leads to sustainability.

¹⁰ “Closed” in this context is a term of art. Anyone can join the conversation concerning deep ecology. However, the terms and concepts taken for granted within the deep ecological community (for example, ecocentrism vs. anthropocentrism, deep vs. shallow ecology, ecosophy) forestall participation unless one “pays” her or his semantic and conceptual dues.

¹¹ These workshops, staffed by Dolores, George Sessions, myself and others, were conducted annually at the Aspen Center for Environmental Studies in Aspen, CO. Prior to these, Dolores occasionally organized gatherings of deep ecologists at her Way of the Mountain Learning Center in Silverton, CO.

Alternative two seems unlikely for several reasons. The Gaian thesis itself is controversial, and openly dismissed by more quantitative-minded ecologists, who believe that ecology is basically like physics, where knowledge of the parts equates with knowledge of the whole. Further, despite the deep ecological consciousness of thousands upon thousands if not a few million humans, the political economy of the developed world, whether capitalist or socialist, operates on a time scale inimical to sustainability. The skeptics, then, dismiss conversation concerning a deep ecological consciousness in favor of the notion that the co-adapted memetic complex, basically the instruction set for the production and reproduction of cultural systems, is highly resistant to change, virtually self-perpetuating.¹²

Perhaps alternative three is most accurate, if for no other reason that almost every class of any kind is best described in terms of the mean, the statistical middle. But, on my interpretation, what LaChapelle implies (and so, too, Naess) is that slowly but surely the consciousness of Gaia is rising, and the transformation to sustainable living, with abundant wild places and species, is *possible*. So construed, deep ecological consciousness is the cutting edge of the scientific and ethical knife that has the potential to perturb the established order. Nonsense, you might be thinking, as it appears that I am claiming that DE possesses some magical potency to heal the world, as if uttering a transformative abra cadabra, presto chango. Maybe so. But let me offer four short examples where deep ecological consciousness runs rampant, and then return to address the sceptic's challenge. (Please note that these are examples, analogical suggestions that philosophical resonances with deep ecology are evident. I do not suggest that deep ecological principles *sensu stricto* are logically entailed).

- Human Habitation and Settlement

My awareness of deep ecological alternatives for human habitation and settlement began with the Ian McHarg's now classic *Design with Nature* (1969). Fuel to the fire was added by numerous studies showing how the vast, sprawling megalopolises that cover the planet relentlessly exploit their supporting natural environments, as well as the people who live in such environments. Thinkers like Peter Forbes helped articulate notions that even in cityscapes people can rekindle a deep sense of the natural world that sustains them. Gary Snyder and many others developed and practiced various forms of bioregional living. Other bioregionalists, such as Freeman House, helped me begin to understand that committed dwellers of the land

¹² For a succinct account of the power of memetic transmission see Susan Blackmore, *The Meme Machine* (Oxford University Press, Oxford: 1999); for a fuller account see Daniel Dennett, *Darwin's Dangerous Idea: Evolution and the Meanings of Life* (Simon and Schuster, New York: 1995).

can help put the pieces of degraded ecosystems back together.¹³

While the alternatives above might be termed as pure deep ecological practices, a number of middle ground alternatives have appeared as well. Daniel Kemmis' *Community and the Politics of Place*, and his more recent *The Good City and the Good Life*, develop a sense of citizenship that includes and emphasizes membership in the larger, more than human community of life.¹⁴ The so-called new urbanism is another example: the basic idea is offering residents in new urbanist developments a sense of a community that includes the natural surround. New urbanism chimes harmoniously with the local and organic foods movement, and with the reinvigoration of local markets. And green building flourishes, even in the heart of the great cities of the USA.

- The Arts

I can think of no better examples of how the arts have exemplified and nourished deep ecological consciousness than W.S. Merwin's poem "Witness," Judith Anderson's lithograph "Missa Gaia," and Remedio Varo's oil painting "Mutant Plant." "I want to speak for the forest," Merwin writes, "I will have to recover a forgotten language." Living in Hawaii, which as with all islands has fragile ecosystems, Merwin implies that in the hustle and bustle of modern existence and caught in an economy that sees the earth only as resource, virtually all have forgotten the deeper connections that humans once had with the forest. Anderson's "Missa Gaia" draws from the deep well of myth and symbol in depicting a sorrowful Gaia holding a dead whale in her lap. Varo's "Mutant Plant" shows the aftermath of a natural world ravaged by radioactivity.¹⁵

The arts, more generally, have been a seed bed of deep ecological thinking, whether the poetry of Gary Snyder or Robinson Jeffers, the philosophy of Naess or Aldo Leopold, the writings of Lucy Lippard and Mary Austen, the science fiction of "Dune," the photography of Ansel Adams, or the film making of Roland Emmerich ("The Day After Tomorrow"). As many have observed, art in its purest form is language, that is, human expression bursting forth into creative agency

¹³ Ian. L. McHarg, *Design with Nature* (Natural History Press, Garden City: 1969); Peter Forbes, *The Great Remembering* (The Trust for Public Land, San Francisco: 2001); Gary Snyder, *The Practice of the Wild* (North Point Press, San Francisco, 1990); Freeman House, *Totem Salmon: Life Lessons from Another Species* (Beacon Press, Boston: 1999).

¹⁴ Daniel Kemmis, *Community and the Politics of Place* (University of Oklahoma Press, Oklahoma City: 1992); Daniel Kemmis, *The Good City and the Good Life* (Houghton Mifflin, Boston: 1995).

¹⁵ W. S. Merwin, "Witness," in *The Rain in the Trees* (Knopf, New York: 1991). For commentary on Judith Anderson's "Missa Gaia" see <http://aliciahunsicker.blogspot.com/2009/01/judith-anderson-1934-2008-tribute-to.html>. For commentary on Remedio Varo's "Mutant Plant" see J. A. Kaplan, *Remedio Varo: Unexpected Journeys* (Abbeville Press, New York: 2000).

of all kinds. All of the aforementioned artists, regardless of their genre of expression – a poem, a landscape painting, a philosophical phrase, a photograph, and so on – awaken a sensibility in the listener or reader or viewer that each and everyone is connected to the earth, to the land, to the myriad plants and animals that surround us.

- The Economy

Given the wasteland of mainstream economics and the mantra of growth, deep ecologists might be tempted to charge the economy as *prima facie* guilty of environmental crime. And yet, within economic theory we find repeated exemplification of deep ecological sensibilities. First among all these stands, in my mind, the greatest thinker of all, Nicholas Georgescu-Roegen. While largely unknown, his *The Entropy Law and the Economic Process* essentially subverts the mainstream doctrine that nature is of no value until transformed by the market into the goods of consumerism. Further, Georgescu-Roegen poses the fundamental question: what is the purpose of consumption? He answers: it can only be for the sustenance of life rather than the growth of the economy.¹⁶

Trailing in his wake, although generally unacknowledged, we find a host of contemporary alternatives to mainstream theory, including both environmental and ecological economics, including some who look at the economy through the lens of human habitation, such as T. M. Powers and Jane Jacobs. And we also find deep economic thinkers who have developed alternative economic matrices, such as John Cobb's (Jr.) MEW, measure of economic welfare. Finally, we find thinkers such as Marshall Sahlins, whose *Stone Age Economics* takes us back to prehistory, where accumulation for the sake of accumulation, and consumption for the sake of consumption, were self-defeating.¹⁷

A multitude of case studies, too, exemplify a deep ecological perspective, as with Nancy Langston's *Forest Dreams, Forest Nightmares*, and Dean Bavington's *Managed Annihilation: An Unnatural History of the Newfoundland Cod Collapse*, and many, many more. Less academic, first-person narratives, such as William Kittredge's *Who Owns the West*, and Wallace Stegner's *The American West as Living Space*, reveal similar deep ecological sensibilities. Cumulatively these case studies show how unbridled economic exploitation that is indifferent to the land, the

¹⁶ Nicholas Georgescu-Roegen, *The Entropy Law and the Economic Process* (Harvard University Press, Cambridge: 1971).

¹⁷ Thomas Michael Power, *Lost Landscapes and Failed Economies: The Search for a Value of Place* (Island Press, Covelo: 1996); Jane Jacobs, *The Economy of Cities* (Vintage Press, New York: 1970); Marshall Sahlins, *Stone Age Economics* (Aldine Press, New York: 1974).

flora, and the fauna, leads to ecological ruin and economic collapse.¹⁸

- Science and Technology

As with McHarg's classic (1969), the first stirrings of deep ecological thinking in technology, for me, was E. F. Schumacher's *Small is Beautiful* (1973), surely a book that with a single word, "appropriate," brackets technology in terms of questions of ecology/people.¹⁹ Later I discovered perhaps the earliest of all critical questioning of technology, Mary Shelly's *Frankenstein*, which reveals the technological distorting of our basic humanity.

Interestingly, a number of scientists, such as the physicist John Firor, argue that the technologies that ravage the naturally evolved atmosphere will not be brought under control until the question of human definition itself is raised and answered! Still others, such as E. O. Wilson, have persuasively argued that biophilia, the love of life, is inherently and fundamentally a part of being human. And finally the basic insight of Nobel Laureate Ilya Prigogine, who makes clear that scientific thinking is only possible because the knowing agent is him or herself embedded in the natural world. "Nature," he writes, "cannot be described 'from the outside,' as if by a spectator. Description is dialogue, communication, and this communication is subject to constraints that demonstrate that we are macroscopic beings embedded in the physical world."²⁰

DEEP ECOLOGICAL CONSCIOUSNESS AS A STRANGE ATTRACTOR

Seemingly, given these examples, I have confirmed the skeptics charge that DE disappears as any meaningful paradigm or philosophy if it subsumes all the above and more. But try thinking that DE is a *multivalent discourse* that cuts across *the entirety of human agency*, of human creativity, from human settlement and habitation, to the production and distribution of foodstuffs, to poetry and film, the economy and on and on. In other words, one does not need to be a card carrying deep ecologist, versed in the texts of Sessions and Naess, in order to manifest a deep ecological consciousness. And, as I reflect on the fifty-some years of my adult life, I find manifestations of a deep ecological awareness in virtually every venue of human life.

¹⁸ Nancy Langston, *Forest Dreams, Forest Nightmares: The Paradox of Old Growth in the Inland West* (University of Washington Press, Seattle: 1995); Dean Bavington, *Managed Annihilation: An Unnatural History of the Newfoundland Cod Collapse* (UBC Press, Vancouver: 2010); W. Kittredge, *Who Owns the West?* (Mercury House, San Francisco: 1996); Wallace Stegner, *The American West as Living Space* (University of Michigan Press, Ann Arbor: 1987).

¹⁹ E. F. Schumacher, *Small is Beautiful: Economics as if People Mattered* (Blond and Briggs, London: 1973).

²⁰ Ilya Prigogine & Isabelle Stengers, *Order Out of Chaos: Man's New Dialogue with Nature* (Bantam Books, New York: 1984), 300.

I return to the lyrics of the counter-culture's anthem: "We are stardust, we are golden, we are billion year old carbon, And we got to get ourselves back to the garden." Bear with me, momentarily, as I want to avow and briefly explore the notion that a deep ecological consciousness profoundly resonates with the mytheme of the Garden, and, even more, resonates with a paleo-consciousness, when humankind recognized itself as part and parcel of the natural world. What I am suggesting is in one sense philosophical heresy, for philosophers have long believed that ideas, and ideas alone, whether Platonic forms or phenomenological essences or Wittgensteinian silences or Cartesian ideas, transform the world.

The more closely we look at evolution, the more we understand about our own fabrication, including our neurohistory, the more we understand that, while ideas are important, they are not the fundamental movers of human consciousness, the basic shapers of culture.²¹ Rather we need to look elsewhere, into the subcortical structures that overdetermine human behavior. Alternatives to the belief that Reason, and reason primarily, determines human behavior are many. For example, Nobel Prize winner Daniel Kahneman identifies two kinds of thinking – fast and slow. Slow thinking is more often termed "reason," which requires "mental work: deliberate, effortful, and orderly" (also called the "executive function of cognition" by Kahneman). But more often human behavior is governed by fast thinking, which is spontaneous and intuitive, and making decisions which go on in the "silence of the mind."²²

Myth and mythic belief systems, to take another example, are also enormously influential. William Doty, in his near definitive study of myth, *Mythography*, and Bruce Lincoln, in a remarkable study, *Discourse and the Construction of Society*, draw clear distinctions between narratives, such as science and philosophy, that make truth claims, and mythic narratives that make no such claims. Paradoxically, or so it seems to philosophical mind, the latter narratives more often than not trump reason (as for example biblical accounts of creation versus evolutionary accounts). My point is that a deep ecological consciousness has added value, at least for refugees from the sixties (i.e., folks of my age who find meaning in notions like "we are stardust"), in that there are narratives that "convey the political and moral values of a culture" (as Doty writes) beyond those found in the chapter and verse of philosophical argument.²³

²¹ More than 4.5 billion dollars are invested annually into such research. The payoff has been an enormous increase into our understanding of the operation of the brain/mind.

²² Daniel Kahneman, *Thinking, Fast and Slow* (Farrar, Straus and Giroux, New York: 2011), 20, 4.

²³ Bruce Lincoln, *Discourse and the Construction of Society: Comparative Studies of Myth, Ritual, and Classification* (Oxford University Press, Oxford: 1989); William G. Doty, *Mythography: The Study of Myths and Rituals* (University of Alabama Press, University, Alabama: 1986), 11.

CONCLUSION: THE FATE OF DEEP ECOLOGY

“Life is a moving river into which we cannot step twice,” so claimed the venerable pre-Socratic, Heraclitus. Certainly, if we consider a geological time scale stretching over nearly five billion years, the basic constant of the Earth seems to be, paradoxically, change itself. A time lapse film where each frame jumped a million years would show chaos, a relentless churning of the earth’s crust, where molten rock bubbled like a boiling tea pot, where mountains rise and fall like waves, where oceans come into existence and disappear, where continents migrate like itinerants, and where species come and go as if in a maelstrom. On this time scale the advent of the Anthropocene does not even register, rendered invisible within a million year time frame largely dominated by the spread of ice.

Why, then, given these Titanic forces of evolutionary chaos, entirely independent of human agency, should we be concerned? After all, as Heraclitus concluded, the wise person should accept the reality of change. In today’s parlance, he advises us to go with the flow, to swim with the current rather than against it. Deserts have given way to oceans and then deserts again, mountains have risen and then collapsed into plains, only to rise again, jungles have been covered by ice and then emerged again, and all species are basically here today, gone tomorrow. Given this backdrop, how can we think of a deep ecological consciousness as anything more than a hair shirt for those preoccupied by questions of human agency?

But that is precisely the point: it is only in light of our evolved position in the Heraclitean world that we can suffer the hair shirt. Almost five decades ago a remarkable if largely unremarked publication, *Biology and the Future of Man*, came into print. Basically a compendium of reports by the members of the Committee on Science and Public Policy of the (US) National Academy of Sciences, edited by Philip Handler, the concluding chapter takes note of the many fundamental challenges threatening civilization. Although the language is dated, the point is correct. “If mankind escapes the dark abysses of its own making, then truly will the future belong to man, the only product of biological evolution capable of controlling its own further destiny.”²⁴

Writing nearly two decades later, in pondering the future of the deep ecological movement, Arne Naess expresses a strikingly resonant idea. “It is my hope,” he writes, “that beings endowed with a brain like ours, developed through hundreds of millions of years in close interaction with all kinds of life will inevitably support a way of life not only narrowly favourable to this species, but favourable to the whole ecosphere in all its diversity and complexity.”²⁵

²⁴ Philip Handler, ed. *Biology and the Future of Man* (Oxford University Press, New York: 1970), 888.

²⁵ Arne Naess, trans. & ed. David Rothenberg, *Ecology, Community and Lifestyle: Outline of an Ecosophy* (Cambridge University Press, New York: 1989), 212.

Although the term “deep history” did not yet exist, Naess thus nails a profoundly evolutionary perspective, one that, as I have implied, fully and completely contextualizes/grounds deep ecology. In essence, deep ecology is the deepest of all evolutionary ethics.²⁶

Let me expand briefly on this notion, beginning with the question concerning the meaning of evolution. And the answer most often offered by evolutionary science is twofold. Evolution in its rawest, chaotic, Heraclitean sense, is intrinsically meaningless. And yet, in the local vicinity of space and time, in what amounts to a blink of the cosmic eye, creatures with hugely expanded cerebral cortices appeared. And they came to consciousness of the marvel and beauty of the evolving, far from equilibrium complexity of the living world. Thus came meaning to evolution beyond chaos, within the human brain, itself set in an evolutionary context.²⁷

Poets and philosophers, painters and scientists, wilderness hikers and almost anyone who has looked beyond the end of their nose, have felt and sometimes expressed this meaning in a thousand and one different ways. In one sense they’ve all said the same: Behold the wonder and mystery of what evolution – even if a blind watchmaker, as Richard Dawkins observes – has created. The natural, wild world virtually compels us to, as Robinson Jeffers suggests, to fall in love outwards.

And yet, at this moment in the Anthropocene, almost precisely as Naess expresses, the meaning of evolution is at risk because of the dominant cultural forces at work. He sees, clearly, that time is out of joint. The evolved cultural system and the naturally evolved systems of the planet are fundamentally at odds. So construed, the meaning of deep ecology – *at least intuitively* – is intrinsically tied with the meaning and reality of natural evolution, writ large at a cosmic scale and, at a much smaller scale, in the local vicinity of space and time.

I do not know of any knock down argument that proves such an intuition. But the controversy between so-called eco-pragmatism (or the “new conservation science”) and deep ecology-minded ecologists and conservation biologists, such as E. O. Wilson, Michael Soulé, and Reed Noss, perhaps clarifies the intuition. The underpinning of eco-pragmatism is found in an article authored by Peter Kareiva, Michelle Marvier, and Robert Lalasz, “Conservation in the

²⁶ Conceptually elaborating the suggestion that deep ecology is the deepest of all evolutionary ethics entails at least an article if not a book or three. Naess unquestionably begins that work. For example, see page 46 (and elsewhere) in *Ecology, Community, and Lifestyle*. He writes: “As to ‘Evolution!’, this norm inserts a long-range perspective characteristic of the deep ecological movement: ‘Long term viability of whole systems!.... Continued evolution is indispensable for the long-range maintenance of diversity and richness of life forms (cf. point (2) of the Platform...’.”

²⁷ Among many see George Gaylord Simpson, *The Meaning of Evolution: A Study of the History of Life and of Its Significance for Man* (Yale University Press, New Haven: 1949); Ernst Mayr, *Toward a New Philosophy of Biology: Observations of an Evolutionist* (Harvard University Press, 1988); and Prigogine, *Order out of Chaos*.

Anthropocene.”²⁸ The piece keenly observes the obvious by noting that there is an extinction crisis well underway and thus, they claim, conservation is failing. The solution, they continue, “is a new vision of a planet in which nature – forests, wetlands, diverse species, and other ancient ecosystems – exists amid a wide variety of modern, human landscapes. For this to happen, conservationists will have to jettison their idealized notions of nature, parks, and wilderness – ideas that have never been supported by good conservation science – and forge a more optimistic, human-friendly vision.” In essence, then, what the new conservation proposes is essentially an audacious, global scheme of managing planet Earth, as the Earth is nothing more than so many parks, gardens, impounded rivers, forest and agricultural fields.

I will forego an attempt to summarize the many critical responses to the ongoing controversy created by this claim beyond noting the rebuttals found in *Keeping the Wild: Against the Domestication of Earth* (2014). However, these rejoinders, while new, are also old, in that they resonate with an array of publications from the last twenty years, some theoretical, such as Simon Levin’s *Fragile Dominion: Complexity and the Commons*, and some practical, such as Dave Foreman’s *Rewilding North America: A Vision for Conservation in the 21st Century*.²⁹ These materials collectively establish the following:

- There are no known humanly managed ecosystems involving the extraction of natural resources that are sustainable, whether forests, wetlands, fisheries, or farms.³⁰ Indeed, the inherent evolved complexity of such systems flies in the face of managerial arrogance, and saddles such endeavors with myriad “unintended consequences.” As Levin observed more than a decade ago, human dominion over nature is extraordinarily fragile, at best. Finally, the total and complete collapse of experiments such as Biosphere 1 and 2 demonstrate the folly inherent in the attempt to replace evolved life support systems with human designed systems.
- Rather than doubling down on the failures of business as usual, as the so-called new conservation proposes, the future of conservation depends on

²⁸ See <http://thebreakthrough.org/index.php/journal/past-issues/issue-2/conservation-in-the-anthropocene/> for the complete text of the article. Kareiva is the chief science for the Nature Conservancy, Marvier is the department chair of Environmental Studies and Sciences at Santa Clara University, and Lalasz director of science communications at the Nature Conservancy.

²⁹ Simon A. Levin, *Fragile Dominion: Complexity and the Commons* (Perseus Books, Reading, Mass.: 1999); Dave Foreman, *Rewilding North America: A Vision for Conservation in the 21st Century* (Island Press, Covelo: 2004).

³⁰ For example, Langston, *Forest Dreams, Forest Nightmares*, which details the complete failure of forest management in the western US, and Bavington, *Managed Annihilation*, which shows the inherent weaknesses of managerial arrogance and the collapse of the North Atlantic Cod fishery.

what might be termed “letting go,” that is bracketing the anthropocentric arrogance inherent in the idea of managing planet earth, part and parcel, and embracing the notion – as Leopold reminds us – that we are plain members and citizens of the land community.³¹

- Finally, and most disturbingly, even if public policies that (a) spring from deep ecological consciousness and (b) have the force of national and international law are established, the inherent complexity of evolved systems and the inability to predict outcomes mitigates any sense of optimism. There are no guarantees of success. But clearly wild nature, in all its complexities, must figure in any viable policy option. To the new conservationists and eco-pragmatists, as I wrote several years ago, “such an idea seems naive, a denial of the reality (as they perceive it) that humankind has no option but to continue to develop the planet’s natural resources.” In contrast, from a deep ecological perspective, “a sustainable trajectory beneficial for civilization can only be realized through the conservation, preservation, and restoration of the Earth’s wilderness.”³²

History books begin and end, as do readings of deep ecology, as with the one of these pages. As I hike almost daily in the semi-wilds of the Sandia Mountains I sometimes think of the many intellectual pleasures that deep ecology has offered to me. But, as deep history reminds me, within the complexity of our brains there are other well springs of human action. Repeating the epigraph from Smail, “Merely having the idea is not sufficient to guarantee its success. The dozens, the hundreds, the thousands of good ideas out there all have to undergo some sort of selection process.” I hope now, more than ever, that deep ecology stimulates motivations beyond the intellect that have the catalytic power to transform the human endeavor.

³¹ On the science behind the notion that humans are plain members and citizens of the land community/nature, the knockdown argument can be found in Prigogine.

³² Max Oelschlaeger, “Wilderness,” in W. Jenkins and W. Bauman, eds., *The Berkshire Encyclopedia of Sustainability: The Spirit of Sustainability* (Berkshire Publishing, Great Barrington, Mass.: 2010), 430-32.