

Ecological Integrity – A Commitment to Life on Earth



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The essential contribution of the Earth Charter is in promoting a global moral community based on shared values and principles for a more just, sustainable, and peaceful world. Because it is grounded so strongly in the ecological integrity concept, the Earth Charter ethic requires an unprecedented planetary scale of moral reflection. Integrity implies a wholeness that is nurturing and necessary for human well-being. The ecological integrity pillar of the Earth Charter ethic ties the current and future well-being of humans, and the greater community of life, to the ongoing care and protection of Earth as our home. In this essay, I provide a scientific perspective on ecological integrity, examine how the concept is articulated within the Earth Charter¹, and consider case studies of how the Earth Charter's principles, inclusive of ecological integrity, have found expression in real world action.

Who can hear the word "tsunami" and not recall the devastation wrought upon Indonesia, Sri Lanka, and other countries on 26 December 2004. History is replete with stories of the destructive powers of wild nature with fire, flood, drought, earthquakes, and plagues having brought misery to human societies in all ages. It is understandable then that most people fear wild nature and measure progress by the extent to which we are removed and protected from the associated forces. Such reali-

ties resonate with the observation in the Earth Charter that, "the forces of nature make existence a demanding and uncertain adventure...." (Preamble, paragraph two).

In the face of experiences like the Indian Ocean tsunami of 2004, the concept of ecological integrity can seem puzzling. But, only recognising the destructive dimension to wild nature yields an incomplete understanding, as there are also constructive natural forces at play. It is actually the interplay between the processes of synthesis and decay that has made Earth inhabitable for human and non-human life. This interplay is evident in the co-evolution of life and Earth's environment. While the actual genesis of life on Earth remains a mystery to science, the geological record shows that life first emerged on Earth around 3.5 billion years ago. However, the evolutionary journey has not been a matter of life simply responding to changing environmental conditions. Rather, life has continually interacted with the surrounding environment, thereby creating the very conditions necessary for life on Earth².

At a global scale, the most powerful example is the relationship between living organisms and Earth's climate. The amount of solar energy stored within Earth's atmosphere is regulated by the atmosphere's chemical composition (in particular, through the albedo and greenhouse affects). This energy in turn drives Earth's climate. All living organisms, including humans, continually exchange gases with the surrounding environment (e.g., through plant photosynthesis and animal respiration). The affect of this exchange between living organisms and their environment over the course of billions of years has been to transform the chemical composition of the atmosphere, Earth's energy balance, and hence Earth's climate.

At a local scale, ecosystems also work to modify the local environment. The cover of plants and soil regulates the flow and quality of water from a catchment. The fungi and microorganisms in the soil help recycle mineral nutrients enabling plants to continue photosynthesising and producing new biomass. Local ecosystems on land and in the oceans provide humans with food, other useful chemical substances, freshwater, and fibre for clothes and shelter. Particularly in developing nations, local

communities are directly dependent on the renewable natural resources provided by the surrounding ecosystems, unmediated by technology.

The continued functioning of ecosystems does not require human intervention, as they are self-generating and self-sustaining. By definition they are dynamic systems whose internal components (including the communities of plant, animal, bacterial, and fungal species) change through time and in response to external conditions. The wild processes that sustain the ecological integrity of ecosystems include the evolution of new species and the dispersal of existing plant and animal species and their propagules. Ecosystems are effectively “managed” by natural selection that ensures the best-adapted species persist in the system given prevailing conditions.

From this perspective, ecological integrity refers to the continued healthy or proper functioning of these global- and local-scaled ecosystems and their ongoing provision of renewable resources and environmental services. Humans can intervene in these systems in ways that undermine their self-sustaining capacities. For example, humans can harvest substances from ecosystems at rates exceeding the system’s capacity to regenerate. Thus, we can log wood from forests at a rate faster than the trees can regrow, and harvest fish from the ocean faster than the fish populations can be replenished. At the extreme end of human intervention, we clear the land of the evolved ecosystem and replace the landscape with a land cover that is maintained by continual inputs of human capital, technology and labour. At larger scales the impact of human actions accumulates to degrade the global ecosystem. The degradation of the ozone layer and the ongoing and now chronic influence of greenhouse gas emissions from burning fossil fuel on Earth’s climate are powerful examples of humanity’s capacity to collectively degrade ecological integrity at a planetary level³.

The concept of ecological integrity is unpacked in Principles 5 through 8 of the Earth Charter. However, the concept is reflected throughout the document. The Preamble makes clear the overarching dependence of human well-being on Earth’s ecological integrity, “...Earth has provided the conditions essential to life’s evolution. The resilience of the community of life and the well-being of humanity depend upon preserving a healthy biosphere with all its ecological systems...” (Preamble, paragraph two) and, “The choice is ours: form a global partnership to care for Earth and one another or risk the destruction of ourselves and the diversity of life.” (Preamble, paragraph four).

Most of the principles in Part II, Ecological Integrity, are of a different kind to the principles in Parts I, III, and IV. The first four principles in Part I, Respect and Care for the Community of Life, state a basic set of aspirational values defining the kind of world we seek to create and leave as our legacy. The ecological integrity principles are largely “directive” as they suggest actions that can or should be taken to avoid or minimise our

ecological footprint. Many of the principles reflect scientific-based understanding of practical steps needed to protect wild nature, for example, Subprinciple 5.b, “Establish and safeguard viable nature and biosphere reserves, including wild lands and marine areas, to protect Earth’s life support systems, maintain biodiversity, and preserve our natural heritage.” Another example is Subprinciple 5.e, “Manage the use of renewable resources such as water, soil, forest products, and marine life in ways that do not exceed rates of regeneration and that protect the health of ecosystems.”

Principle 6 and supporting subprinciples present a strong reinterpretation of the precautionary principle that builds upon that articulated in the Rio Declaration and the UN Framework Convention on Climate Change. Subprinciple 6.b is particularly challenging as it asks us to “Place the burden of proof on those who argue that a proposed activity will not cause significant harm, and make the responsible parties liable for environmental harm.” If this idea were to be implemented, it would dramatically alter how major developments proceed. For example, environmental impact assessments would be not only obligatory for all major projects, but would need to be conducted in a highly rigorous and comprehensive manner with greater concern for long-term and accumulated impacts, as proposed in Subprinciple 6.c. Of course, being a Peoples’ Charter, the Earth Charter is not a legally binding treaty. Therefore, endorsing the Earth Charter does not impose any legally enforceable obligations. Principles such as 6.c, at this point in the history of international law, simply point to how planning and decision-making need to evolve if we are to ensure human activities do not cause serious harm to Earth’s ecological integrity.

Principles within the Ecological Integrity theme also make a bold attempt to integrate the two main drivers of global change, namely, the rapidly increasing human population and the seemingly ever-increasing rates of material consumption. The former is seen as the prime cause of environmental degradation by many in the global north (e.g. USA), and the latter by people in the global south (e.g. India). In reality, both factors combine to increase the environment load on Earth’s ecosystems. Thus, the wording of Principle 7 is both novel and important, “Adopt patterns of production, consumption, and reproduction that safeguard Earth’s regenerative capacities, human rights, and community well-being.”

Principle 7 suggests our concern for ecological integrity stems from far more than just a sense of enlightened self-interest based on the environmental services provided by global and local ecosystems. This is especially so if we interpret “community” in the sense of Principle 2’s reference to the “community of life,” and remain mindful of our responsibilities to future generations in Principle 4. From an Earth Charter perspective, ecological integrity is necessary for all life, human and non-human, including future generations – even species yet to exist – thereby ensuring we give consideration to the full evolutionary

potential of life on Earth. Finally, Principle 8 stresses the importance of education and the transfer of the knowledge necessary to protect ecological integrity. Scientific investigations are necessary to understand how Earth's ecosystems work and the current and potential impacts of human activities. We are also increasingly appreciating the contributions of traditional ecological knowledge to sustainability.

The starting point for the Earth Charter was a review of values and principles already embedded within existing international declarations and treaties. This draft Earth Charter was then modified and added to many times through an extensive global consultation process. It is no surprise, therefore, to find that the values and principles of the Earth Charter find expression in communities, organisations, and enterprises throughout the world. The unique contribution of the Earth Charter is to integrate environmental and social justice concerns within a common ethic. This ethic is exemplified where we find people choosing to find ways in which social justice can be advanced through protecting and restoring ecological integrity.

In collaboration with other non governmental organisations (NGOs), including the Wildlife Conservation Society and agencies such as the Ugandan Wildlife Authority, the Jane Goodall Institute has established in Uganda an integrated chimpanzee conservation programme⁴. A model has been developed called Community Centred Conservation that maintains the local community as its nucleus and guide. This approach empowers local communities with the tools and resources needed to manage their natural resources for long-term economic gain and environmental prosperity.

Elements of the conservation programme include *in situ* conservation activities in remnant forests, management of other issues threatening populations such as poaching, together with ecotourism enterprises. A major Earth Education Programme has commenced that aims to train and supply primary and secondary teachers and community members with environmental knowledge, skills, and curricula. Ngamba Island Chimpanzee Sanctuary was established in October 1998 to care for orphaned chimpanzees that have been rescued by the Uganda Wildlife Authority from poachers and/or traders, with no chance of survival back in the wild.

The Jane Goodall Institute has endorsed the Earth Charter; and its programmes in Uganda, and elsewhere, demonstrate how economic development for local communities and the conservation of wild nature can work together. The Institute's work is an exemplar of the Earth Charter's ethic that brings together social justice, environmental, and animal welfare concerns in a way that reflects an integrated, ethical framework. Real world solutions are only sustainable when all three dimensions are present; development is sustainable when justice is served to the poor; the ecological integrity of Earth's ecosystems is promoted, not degraded; and the intrinsic value of all life is respected.

Earth Charter Principle 7 calls for more sustainable patterns of production and consumption. Towards this end, Subprinciple 7.d recommends we "Internalize the full environmental and social costs of goods and services in the selling price, and enable consumers to identify products that meet the highest social and environmental standards."

These market-based innovations would help ensure that the economic system better reflects important, yet ignored, environmental and social values. Currently, many of the negative impacts on ecological integrity from market-based transactions are not factored into the cost of production, and consumers remain ignorant of the environmental consequences of their investment and consumption decisions. Various systems are being developed around the world in response to this challenge, such as the Dow Jones Sustainability Index (DJSI) and the FTSE4Good Index Series. RepuTex is the registered brand of a small, fully independent, rating agency based in Melbourne, Australia.⁵ The company is dedicated to the delivery of the RepuTex Social Responsibility Ratings (SRR). A RepuTex SRR is an assessment of the extent to which an organisation is performing in a socially responsible manner and managing its social risk exposures in terms of criteria in four domains, namely, Corporate Governance, Workplace Practices, Social Impact, and Environmental Impact.

The Earth Charter is used by RepuTex in a number of innovative ways. First, as a key reference in the formulation of RepuTex evaluation criteria, such that Earth Charter principles, concepts, and language are reflected throughout the RepuTex system. As RepuTex extends its system to the global market, the Earth Charter is providing a set of shared values and principles that helps the criteria remain relevant throughout the regions of the world.

The Earth Charter has assisted The Wilderness Society Australia, an environmental non government organisation, to integrate concerns for wild nature with sustainability for local communities and justice for indigenous communities. This new thinking has found expression in a number of forms. First, the WildCountry project was born as the key visionary conservation theme for the organisation. WildCountry has a long-term vision to ensure the conservation of Australia's extraordinary natural heritage and biodiversity. The purpose is to protect, promote, and restore wilderness and natural processes across Australia for the survival and ongoing evolution of life on Earth. In this way, WildCountry is helping to realize Principle 5 of the Earth Charter that urges us to "Protect and restore the integrity of Earth's ecological systems, with special concern for biological diversity and the natural processes that sustain life," and Subprinciple 5.b, "Establish and safeguard viable nature and biosphere reserves, including wild land and marine areas, to promote Earth's life support systems, maintain biodiversity, and preserve our natural heritage."

To give effect to such vision demands a collaborative approach

based on forging partnerships and alliances with the capacity to conserve biodiversity across land tenures. In this way, WildCountry reflects the sentiments of The Way Forward, the concluding section of the Earth Charter, where it states, “The arts, sciences, religions, educational institutions, media, businesses, nongovernmental organizations, and governments are all called to offer creative leadership. The partnership of government, civil society, and business is essential for effective governance” (paragraph three).

The other area where this new thinking has found expression is in the Wilderness Society’s endeavours to integrate indigenous concerns into their core mission. Again, the Earth Charter proved to be a valuable reference point on this crucial issue with respect to Principle 12. Subprinciple 12.b states the need to “Affirm the right of indigenous peoples to their spirituality, knowledge, lands and resources and to their related practice of sustainable livelihoods.”

Aside from desert biomes, the most extensive areas of the world’s remaining wild lands occur in the tropical savannah of Northern Australia, parts of Kalimantan and Borneo, Indonesian New Guinea and Papua New Guinea, the Russian boreal, the Canadian boreal, parts of the Congo Basin, and the tropical forests of the Amazon basin. In all these cases, indigenous communities have inhabited the landscapes for thousands of years, and in the case of Northern Australia around 50,000 years – the oldest continuous human culture on Earth. Unfortunately, new conservation areas and policies aimed at protecting these remaining wild lands can serve to further alienate already displaced indigenous peoples and may ignore their need to undertake sustainable economic developments. Many non-government environmental organisations have ignored the values, aspirations, and rights of indigenous peoples in wild lands. Such a perspective only serves to reinforce existing injustices and can be counter-productive to conservation aims. Traditional ways of living in these regions have found accommodation with wild natural processes – both destructive and constructive – and in many cases traditional ecological knowledge holds the key to understanding sustainable paths of development in the future.

Following a process of dialogue with indigenous peoples, The Wilderness Society Australia developed an Indigenous Rights policy which recognizes, among other things, that “indigenous peoples are the traditional custodians who have managed the environments of Australia since time immemorial.” The organisation also helped launch the *Malimup Communique* that was developed at a meeting of indigenous representatives, staff of government land management agencies and representatives of non-government environmental groups at Malimup Spring, Western Australia. The communique is concerned with indigenous people and the management of areas reserved or zoned as “wilderness.” The Wilderness Society Australia has endorsed and now integrated the Earth Charter into their organisation’s new guiding principles. Thus, the Earth Charter remains a guid-

ing ethical framework for the unfolding vision of WildCountry and the emerging partnerships with indigenous peoples and other communities throughout Australia.

Currently, the human endeavour is rushing towards a future where the integrity of ecosystems is degraded beyond repair, and we risk the Earth system flipping into a different state which is not supportive of human well-being, nor that of the greater community of life. The Millennium Ecosystem Assessment meticulously details the scientific basis of these concerns.⁶ In such circumstances, our well being becomes increasingly dependent on technology and engineered solutions to provide the necessary life support systems.

We may well survive in a world where Earth’s ecological integrity is destroyed and our well-being is totally dependent on machines, but there may be little wild nature, and poverty may still engulf communities around the world. There will be, no doubt, a future for humanity one way or another; but, will this be a future worth having? The Earth Charter asks us to make a choice about the kind of world we want our children to inherit. A commitment to the Earth Charter ethic rejects cataclysmic futures in favour of continuing efforts to secure a just, sustainable, and peaceful life on Earth for all. With our knowledge, technology, and wealth, we have the means to find a balanced future without poverty, and where ecological integrity is ensured – a future where people live with, not against, wild nature. Herein lies humanity’s choice and fate in the coming century. ●

Notes

1 Also, see discussion in Mackey, B. (2004). The Earth Charter and ecological integrity – some policy implications. *Worldviews: Environment, culture, religion* 8(1): 76-92.

2 This concept was first raised in the 1920’s by Vladimir Verdansky in his book *The Biosphere*, and subsequently developed by James Lovelock’s Gaia hypothesis (Lovelock, J. (1979). *Gaia – a new look at life on Earth*. Oxford: Oxford University Press), and more recently by Victor Gorshkov’s biotic regulation theory (see Gorshkov, V., Gorshkov, V.V. & Makarieva, A.M. (2000). *Biotic regulation of the environment: Key issues for global change*. Springer Praxis Books.)

3 See the reports of the Intergovernmental Panel on Climate Change. Available from: <http://www.ipcc.ch/> [accessed 1 February 2005].

4 Material from this section was based on personal communications with Debbie Cox and the IGS web site. Available from: <http://www.janegoodall.org/africa-programs/programs/> [accessed 1 February 2005].

5 Further details can be found at the company’s web site. Available from: <http://www.reputex.com.au/> [accessed 1 February 2005]. The author is a volunteer advisor to Reputex.

6 The Millennium Ecosystem Assessment. The MA was launched by U.N. Secretary-General Kofi Annan in June 2001 and was completed in March 2005. The MA was governed by a Board comprised of representatives of international conventions, UN agencies, scientific organizations, and leaders from the private sector, civil society, and indigenous organizations. A 15-member Assessment Panel and a Review Board, composed of leading social and natural scientists, oversaw the technical work of the assessment supported by a secretariat with offices in Europe, North America, Asia, and Africa, and coordinated by the United Nations Environment Programme. Its reports are available from www.MAweb.org.