

# The Ethics of Sustainability

Joseph C. Dunstan and Geoffrey M. Swan

Pacific Northwest Region, U.S. National Park Service, 83 South King Street-Suite 212, Seattle, Washington 98104

*The environmental crisis is an outward manifestation of a crisis of mind and spirit. There could be no greater misconception of its meaning than to believe it to be concerned only with endangered wildlife, man-made ugliness and pollution. These are a part of it, but more importantly, the crisis is concerned with the kind of creature that we are and what we must become in order to survive.*

-Lynton Caldwell

IF THERE IS ONE CHARACTERISTIC which distinguishes *Homo sapiens* from other species on Earth, it is, according to the biologist Garrett Hardin, our ability to ask the question "What then?" To imagine the future, and thereby predict the consequences of our own actions, is indeed a unique evolutionary legacy. Regrettably, as a species we have failed to exercise this gift.

When our numbers were small and technology was still in its infancy, we had little impact on global ecosystems. With easy access to new undespoiled lands and other resources, we had no incentives to look beyond our short-term self-interest.

Today, however, *Homo sapiens* is the dominant species on Earth, and we have the ability to cause devastating change to the world in which we live. Carl Sagan worries that "we have become predators on the biosphere, full of arrogant entitlement, always taking and never giving back, until we are-a danger to ourselves and the other beings with whom we share the planet." As a result of our predatory arrogance, we are threatened by self-inflicted, swiftly moving environmental changes about whose long-term biological and ecological consequences we are still painfully ignorant, such as global warming, air pollution, and toxic wastes. We are living the quintessential definition of "environmental justice."

These assaults on the environment cross international boundaries, generations, and ideologies. So do conceivable solutions. To redress the balance will require an ecologically sustainable perspective that embraces all the beings of our planet and all generations yet to come. What is regarded with awe and reverence will be treated with care and respect. Efforts to safeguard and cherish the Earth must be infused with a vision of the sacred. We must establish and then follow ethical principles based on a biocentric—rather than an anthropocentric view of the universe. Anthropocentric cultural beliefs, and arrogant and dangerous technological assumptions so prevalent in our society today are a result of a unique blending of Judaeo-Christian, early Greek and medieval views regarding the place of *Homo sapiens* in the organizational structure of the universe.

The union of these philosophies with *technique* (technology) during the Age of Enlightenment set forth a view of human-environment relations based on "Cartesian rationalism": the notion that all aspects of the universe (including *Homo sapiens*) can be explained through analytic deduction and mathematically correct, logical, universal principles. Cartesian rationalism which has formed the foundation for modern science, carries with it an underlying assumption that only that part of the Universe which can be objectively measured, described, or predicted, is important and thus useful (Bowers). This assumption has led to Cartesian dualism, a view of human-environment relations in which *Homo sapiens* is the dominant force; one in which we are able to shape, control and use nature for our own purposes. The objectification of nature and the subsequent lack of concern for the spiritual and emotional (or subjective) qualities of the human species have led to a separation between *Homo sapiens* and the rest of the universe (Capra 1978). Modern science emerged from this tradition and to a large degree has perpetuated this attitude. Many still speak of "conquering" nature and of the "conquest" of space, as if nature and the cosmos are enemies to be vanquished! According to the natural philosopher John Cobb:

*The belief that we can manage the Earth and improve on Nature is probably the ultimate expression of human*

*conceit; but it has deep roots in the past and is almost universal. The manifestations of this conceit can be recognized in the Stone Age people who domesticated animals and plants some ten thousand years ago; in the farmers of all ages who create agricultural land by cutting down the primeval forces~ draining the marshes, irrigating the deserts; in the [landscape architects] of all historical periods who have converted natural landscapes and waterscapes into artificial parks and gardens; in today's home-owners who maintain lawns where brush and trees would naturally grow.*

Using technology we arrogantly believe we can overcome any obstacle presented by nature. "And if any of [our] 'solutions' cause unanticipated problems, simply apply more technology" (Meffe 1992). Given enough money, motivation, and innovation, we believe we can right virtually any wrong.

## II

If we are to move towards a more sustainable path in the post-modern world, we need to develop a new way of understanding ourselves and our relationship with nature. We must accept the fact that our cultural beliefs and practices are disrupting the sustaining capacities of ecosystems. Secondly, we need to construct a new vision, complete with new rules, and a new vocabulary; in short, we need a new way of thinking about ourselves, and the world in which we live. This "paradigm shift" will require a basic understanding of *Homo sapiens* as part of a natural social order refraining from dominating other species or the Earth. Many of the principles found in "deep ecology" can be used as a foundation for this new way of thinking. Deep ecology seeks a balance and harmony between individuals, communities, and the whole of nature—all of which is seen interconnected. It is grounded in a vision of non-exploitive science and technology, which is correlated with the cultivation of conscience. Based on a biocentric view of the universe, deep ecology seeks to integrate philosophical-spiritual issues and place ecology in front of all else. Deep ecology seeks liberation from waste, excessive appetite, and anxious competition (Sessions). It is consistent with the primary ethical teaching of all times and carries with it the banner to "cause no unnecessary harm" as an approach to *all beings, and all of life*. This post-modern paradigm will require that *Homo sapiens*:

**1. Recognize and accept the fact that we are part of nature.** For too long we have set ourselves *apart from* rather than being a *part of* the environment. Like all species we are subject to the limitations and carrying capacity of the Earth. Our actions both individually and cumulatively accelerate change beyond dynamic ecological equilibrium. As a result, we, like countless life-forms before us, may disappear from the tree of life before the long process of the Earth's restoration cycle can regain the balance.

**2. Cultivate biocentric rather than anthropocentric views and attitudes regarding other beings and nature.** The conceited notion that humans stand at the center of the universe, and all things are given value based on our utilitarian needs, must be rejected. All species and beings have intrinsic value and worth, and must be allowed their own potential, whether we understand them or not (Heidegger 1962). According to Joan Martin-Brown, chief of the Washington Office, United Nations Environment Programme, "The lack of an ethic which values all people, other forms of life, and nature is what makes possible a predatory and separatist relationship between people, and between people and nature, in pursuit of concentrated wealth" (Martin-Brown 1990).

**3. Ensure that consequences are fully considered and integrated into the decision-making process.** The existing paradigm of human dominance and management of nature must be rejected in favor of a reverence for, wisdom about, and vision of nature as a self-maintaining and self-evolving organization in which humans coexist as an integral part of balanced, sustainable, and hierarchical interdependencies. Rather than being an outright rejection of science based on Cartesian dualism, it is an attempt to add a moral context to the important work of science. We must transcend mere knowledge and awareness of our impacts which imbalance delicate ecological interrelationships, and develop the wisdom to act gently as human beings, with respect for all species. We must learn, practice, and teach a reverence for all species, ecological processes, and the rhythms of the land. All are intrinsically valuable

and must be allowed to seek *their own potential*, rather than be forced to adapt to us.

**4. Move from individualism to a support of the community and a greater sense of responsibility to relationships.** We must move from human life based on immediate gratification and short-term self-interest to a heightened awareness of, and respect for the mutual interdependencies of individuals, the community, and other species. We must develop a long-term perspective, a deeper wisdom, if we are to become respectful members of the community of life and its relationships, not just human society.

**5. Reject a blind obedience to the existing paradigm of economic growth.** An ever-expanding society with ever-increasing consumption is inconsistent with the ecological principle of dynamic equilibrium. Ecosystems do not and cannot expand their life-sustaining capacities indefinitely in response to the growing "needs" of *Homo sapiens* or any other species. Change should occur gradually, and, where possible, not at the expense of other species. "A wave of extinctions already is underway [and] as we eliminate species, the interwoven fabric could unravel. By continuing to expand ... we're deciding that we want it all for ourselves. And we're gambling that we can control it all without making mistakes" (Meadows 1992). We must shift to a paradigm of sustainable life that acknowledges and accommodates the rhythms, cycles, and needs of our planet and all its resident beings.

**6. Focus on quality rather than quantity in human activities.** The challenge of sustainability is to forge a paradigm shift away from equating "development" with "economic growth" and toward a model of excellence, personal growth, the attainment of wisdom, and respect for all other species and the carrying capacity of the land. Never static, we envision human society in dynamic equilibrium, accommodating growth in some areas, but which would be offset by reductions in others, with self-imposed limits based on a commitment to quality of life for all species rather than quantity of possessions. The key, according to David Orr, is *respect*, for it "implies a sense of limits; things one does not do, not because they cannot be done, but because they should not be done" (Orr 1992).

**7. Limit global human population.** The root of the problem is that there are too many people competing for finite resources. The Earth has a finite carrying capacity based on the sum of all its resident beings. To the extent that the human population continues to grow, we displace other species (e.g., directly by occupying space and engaging in human commerce; indirectly by using land for food production and housing, and by adding wastes to the planet which inhibit the use of fouled lands by other species). We must understand and respect the carrying capacity of the Earth.

In 1986, a group of scientists at Stanford (including Paul Ehrlich) published a paper in the journal *BioScience* (Vitousek et al. 1986) to report their calculations that "human beings now control 40% of the Earth's land-based net primary productivity (NPP)." NPP is the amount of the sun's energy captured by green plants and fixed into biomass, less the amount of that energy used by plants for their own metabolism. The Stanford scientists go on to say that unless we change our relationship to the planet soon, "within 20-30 years virtually all the NPP of the planet will fall under human control. Every inch of land (will be) managed for human purposes.. In a triumph of tunnel vision, we are transforming the Earth in our image, while, to make room, a hundred of our fellow species are silently eliminated every day. All we can hope to gain from this great loss is the capacity, someday, to grieve for it" (Meadows 1992). According to the conservation biologist Michael Soule, "The scale of loss is beyond any measure the planet has ever known. Death is one thing; an end to *birth* is something else."

**8. Take responsibility to change our attitudes and the way we conduct ourselves on the Earth.** Western civilization has the illusion that technology can raise the carrying capacity of the Earth, fueling our obsession with growth. We cannot simply continue to rely on technology for answers. Instead, we must temper the use of new information and technologies with wisdom and a concern for the long-term effect on all beings. It isn't a question of growth or no growth. Growth and change will occur. The real question is how shall we choose to grow? To paraphrase the PBS-TV documentary "Space Age," "since the dawning of space travel, we have been able to look down at our planet and see it as a living organism. What son of home do we hope this planet will be? To explore this question is a bold step for *Homo sapiens*. To even ask this question is a great leap

for all of life on Earth." In the final analysis, it is our responsibility to adapt to the Earth, and not ask the Earth to adapt to us.

Some may see these principles as constraints which limit progress and development, thereby forcing our culture back into the Dark Ages. Nothing could be further from the truth. Sustainability does not mean we must live like monks. The principles of sustainability are in fact opportunities. To live a sustainable life according to these principles is a reaffirmation of not only the human species, but all species, and most importantly, of Earth and life itself.

### III

"Sustainable development" is fast be-coming the overused slogan of the 1990s. More importantly, according to Judith Plant, editor of *The New Catalyst*, "the sloganeers have got it upside down. The task is to *develop sustainability*" (Plant 1990). We couldn't agree more, and in the previous sections have attempted to lay a foundation for developing sustainability.

This foundation properly in place, it may be said that in order to live a sustainable life, both personally and professionally, one must fully accept and adhere to Aldo Leopold's famous land ethic: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise" (Leopold 1971).

Sustainable thinking is different, be- cause it emphasizes problem solving. It is a new way of thinking which shows respect for biodiversity and on-going eco- logical systems, and understanding of carrying capacities of the land. According to David Orr, sustainable thinking is "the set of perceptual and analytic abilities, ecological wisdom, and practical wherewithal essential to making things that fit in a world of microbes, plants, animals, and entropy. In other words, [sustainable thinking] is the careful meshing of human purposes with the larger patterns and flows of the natural world, and careful study of those pat- terns and flows to inform human purposes" (Orr 1992).

Many U.S. National Park Service efforts at sustainability have been superficial, rather than getting at the *fundamental* relationships between our policies, designs, and facilities, and the life of the Earth. Sustainable thinking *is not* just concerned with what materials to choose when building a visitor center, or how to design a road that is visually pleasing. These are techniques. A good designer would "inquire deeply into the purposes and consequences of things to know what's worth doing and what should not be at all" (Orr 1992). No matter how well designed a visitor center might be in terms of materials, scale, and proportion, if it is not located in an appropriate landscape or if it does not *tend to preserve the integrity, stability, and beauty* of that particular landscape, then the best design skills won't make it right.

### IV

Sustainability is not the sole responsibility of designers, landscape architects, or planners. Sustainable thinking involves everyone making decisions at all levels, from agency policies to maintenance issues. It involves decisions at a variety of scales, including bioregions, specific landscapes, and specific plants or species. In order to achieve continuity of decision-making, politicians, agency managers, scientists, designers, and maintenance staff must understand and integrate the principles of sustainability in their work.

USNPS management policies state that all planning and design efforts should integrate natural resource information into the decision-making process, but most planning and design re- lies on inadequate resource information. The process should be reworked to include the resource inventory and monitoring program, and allow for appropriate time and funding for data collection as needed for the project. Too often, project schedules are based on construction needs or project funding, leaving inadequate time to gather and analyze resource data.

Too frequently we base our designs on the functional needs of the project, rather than its place in the landscape or its long-term maintainability. We worry about aesthetics and short-term impacts rather than the long-term viability of the site. We need to realize that when we build a facility or a road, it becomes a

part of the landscape and its ongoing processes.

Maintenance staff often chooses solutions that may be expedient and cost-effective over the short-term, but are not respectful of the environment. As an example, we often use pesticides for structures with moisture (and therefore infestation) problems, rather than fix the moisture problem through repair or rehabilitation of the structure. How many times have we spent thousands of dollars to place riprap on road embankments adjacent to rivers? Had the road been located away from the river in the first place, we could have eliminated this problem. Sustainable thinking would address the problem, not the symptoms. Green maintenance would take the time and effort to respect the environment.

## **Natural Resources**

What is the appropriate role of resource management in the USNPS? The idea that we can "manage" our natural resources is an anthropocentric and conceited notion that encourages us to manipulate resources. We constantly fall into the trap of trying to protect specific resources, features, or species, while ignoring their complex interrelationships with each other and with dynamic ecological processes. How much longer will we treat the symptom and not the problem? Many of our attempts at restoration are attempts to redress mistakes made in the past or mitigate continuing impacts from beyond park boundaries. Like management, restoration is anthropocentric because it implies that we know what is best for the earth, a proclamation not supported by history.

To 'be consistent with a sustainable approach, "resource management" should be renamed "resource protection" or "people management." We assert that the only rational basis for this program is to understand and respect the evolutionary history of entire ecosystems, and to adopt measures designed to limit human impacts to those that can be accommodated within those constraints. Ecosystems must be both self-sustaining and self-evolving at the velocity dictated by nature, not by the human species.

## **The Role of Science**

The present view of scientists in the USNPS can be summarized as: "We must study the resources in our parks in order to fulfill our responsibility of stewardship." What are the ethical values associated with how we undertake our studies? More often than not, the focus is on gathering more information, which increases our technological capability so that we can *protect* and *restore*, or in other words, manipulate resources. Like resource management, science concentrates its efforts on specific resources, features, or species, and ignores their complex interrelationships and dynamic ecological processes.

Following its own history of Cartesian dualism, science too often concentrates on only those things that are quantifiable, turning living systems into mathematical models. In recent months there has been discussion in the USNPS regarding "limits of acceptable change." Acceptable to whom? Are these "limits" objective, subjective, or holistic? If limits are "acceptable" only to human beings, this is yet another anthropocentric concept! How many more studies quantifying the effects of air pollution on the visitor to the Grand Canyon do we need before we can say with assurance that air pollution is bad?

Science must extend its web of investigation to include entire ecosystems, not single species, entire bioregions, not just Yellowstone, Grand Canyon, or Mt. Rainier National Parks. Science must journey beyond the limitations of Cartesian dualism and concentrate efforts on understanding the interrelationships *between Homo sapiens* and all other species that live in an interconnected world of on-going, dynamic processes.

## **V**

We have attempted to show that our cultural beliefs and attitudes are responsible for the environmental degradation that surrounds us. It follows then, that technology alone cannot solve a problem we have created from within ourselves. We must have the wherewithal to look inside ourselves; to resist historical forces, and take responsibility for our own actions; to ask deeper questions, and to forge a new sustainable way of living on the Earth.

Speaking personally in our role as professional landscape architects, we believe that we are practical people. We work with engineers and maintenance professionals, two of the most practical groups we can think of. But in the final analysis, we believe that to live a practical life without an ethical vision to guide us, is to live a life of moral impoverishment. As Karl Marx wrote in *Feuerbach*; "Philosophers have thus far only interpreted the world in various ways. The point however, is to change it."

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