

# Sustainability: a Dissent

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**Abstract:** *Broadly conceived and considered in its many usages, sustainability has grave defects as a planning goal, particularly when used by conservationists: it confuses means and ends; it is vague about what is being sustained and who or what is doing the sustaining; it is uninspiring; it is little more than Pinchot-era conservation (and thus ignores the many lessons learned since then); it need not be linked to land, to the land's functioning, or to any ecological science; it need not include a moral component; it is consistent with the view of humans as all-powerful manipulators of the planet; and, in general, it is such a malleable term that its popularity provides only a facade of consensus. When sustainability is defined broadly to include the full range of economic and social aspirations, it poses the particular risk that ecological and biodiversity concerns will be cast aside in favor of more pressing human wants. Given these many defects, the conservation movement should discard the term in favor of a more alluring goal, attentive to nature and its ecological functioning. A sound goal would incorporate and distill the considerable ecological and moral wisdom accumulated since Pinchot's day while giving conservationists the rhetorical tools needed to defend the land against competing pressures. In our view, conservation would be well served by an updated variant of "land health," Aldo Leopold's ecologically grounded goal from the 1940s. Land health as an independent understanding should set the essential terms of how we live and enjoy the earth, providing the framework within which we pursue our many social and economic aims.*

**Key Words:** agrarianism, biodiversity, conservation goal, ecological processes, environmental justice, land health, nature and culture, soil fertility

Sustentabilidad: un Disentimiento

**Resumen:** *Ampliamente conceptualizada y considerada en sus múltiples acepciones, la sustentabilidad tiene graves defectos como una meta de planificación, particularmente cuando es utilizada por conservacionistas: confunde medios y fines; es vaga en cuanto a lo que será sustentado y en quien o que esta siendo sustentable; es poco inspirante; es poco más que conservación en la era de Pinchot (y por tanto ignora las muchas lecciones aprendidas desde entonces); no necesita ser ligada a la tierra ni a su funcionamiento, ni a ciencia ecológica alguna; no necesita incluir un componente moral; es consistente con la visión de los humanos como manipuladores todopoderosos del planeta; y, en general, es un término tan maleable que su popularidad proporciona solo una fachada de consenso. Cuando la sustentabilidad es definida ampliamente para incluir toda la gama de aspiraciones económicas y sociales, se presenta el riesgo particular de que los intereses ecológicos y de biodiversidad sean hechos a un lado a favor de deseos humanos de más presión. Dados estos muchos defectos, el movimiento conservacionista debería descartar el término a favor de una meta más atractiva, atenta de la naturaleza y su funcionamiento ecológico. Una meta acertada incorporaría y destilaría la considerable sabiduría ecológica y moral acumulada desde los días de Pinchot y proporcionaría herramientas retóricas necesarias para defender a la tierra de presiones competitivas. En nuestra visión, la conservación estaría bien servida con una variante actualizada de "salud de la tierra," el objetivo ecológicamente basado de Aldo Leopold en los 1940s. La salud de la tierra como una comprensión independiente debería fijar los términos*

*esenciales de cómo vivimos y disfrutamos la Tierra, proporcionando el marco en el cual perseguimos nuestras múltiples metas sociales y económicas.*

**Palabras Clave:** agrarismo, biodiversidad, fertilidad de suelos, justicia ambiental, meta de conservación, naturaleza y cultura, procesos ecológicos, salud de la tierra

## Introduction

In its many forms, sustainability has drawn wide support as a conservation ideal, to the point where it has become, for many, the guiding light of environmental work. This has been true even though the term is notoriously vague on what is being sustained (Agenda 21; Noss 1991; Sitarz, D. 1993; Worster 1993; Gale & Cordray 1994; Willers 1994; Lélé & Norgaard 1996; Lackey 1998; Orr 2002). Champions of sustainability have responded to its vagueness by crafting more specific definitions (Brundtland 1987; Cairns 1998; Callicott 1998; Parris 2003). But to produce a variety of personal definitions is not to resolve the term's nagging vagueness; it is merely to highlight the confusion. We need to open our eyes. Sustainability lacks solid meaning.

Our thesis is that sustainability has grave defects as a conservation goal and ought to be replaced. Linguistically, the term is an adjective dressed up as a noun. Much like efficiency, another such adjective, sustainability is not a freestanding goal so much as an attribute of the means used to achieve a goal. Just as efficiency means merely "low cost," sustainable means little more than "considering the long term." Yet what is it that, over the long term, we are supposed to sustain, and who is doing the sustaining?

Vagueness aside, sustainability has roots in conservation ideas popular a full century ago and thus does not encompass the wisdom we have accumulated, step by step, in the intervening years. Sustainability shortchanges ecology and the useful transformation ecology has brought to conservation thought. It also ignores or clouds over conservation's fundamental criticisms of modern culture, particularly of our capitalist ethos and ardent individualism. As a guide for our work, its shortcomings are many.

Sustainability's popularity among conservationists ought to give us pause because it provides telling evidence that conservation is on the rocks, intellectually speaking. The term's popularity, we believe, should be a wake-up call for those who take ideas seriously. If conservation had a sound overall focus, sustainability would not enjoy the popularity it does. If conservation had well-crafted rhetoric—simple ideas that we could lay beside sustainability to make a quick comparison—we would not find ourselves, as we now do, in such an intellectual morass.

Conservationists need to get their act together, intellectually and morally. And they need to do so by crafting an overall vision of what is to be accomplished; not a vision

of unaltered, unchanging nature, but an appealing vision of a life in which people prosper on the land while respecting the land's processes, mysteries, and beauties. Until that happens, conservation runs the risk of being drawn into and overwhelmed by the many social and economic considerations that sustainability, broadly conceived, so often includes. Without a separate identity, without a distinct, ecologically grounded goal and measuring metric, the conservation cause is unlikely to stem the land's ongoing decline.

## The Surface Defects of Sustainability

*Sustainability*, the noun, is relatively new to the English language. Its first recording in a dictionary may have come in 1987. The underlying concept, though, has been familiar for much of a century. In its adjectival form—*sustainable*—it entered popular speech to describe the scientific method of Progressive Era forestry. In the 1970s, largely through the work of Wes Jackson, sustainable became attached to a branch of agriculture (Jackson 1978). Promptly it began appearing in conjunction with a varied range of cultural ideals: sustainable development, sustainable institutions, sustainable societies, and sustainable future.

Not long after sustainability's rise, academic commentators began noting its conflicting meanings. *Sustainable agriculture* became a particularly fertile phrase with almost countless variations, from those that condemned industrial agriculture as manifestly unsustainable (Jackson et al. 1984; Berry 2001) to those who urged that it was industrial agriculture itself that ought to be sustained (McIsaac & Edwards 1994). To those paying attention, sustainable and sustainability meant little until one knew clearly what was being sustained. Yet no one could give an authoritative answer. Serious conservationists typically proposed to sustain ecological processes and biological diversity (Callicott & Mumford 1997). But these were personal preferences, not inherent in the concept itself.

What few observers have noted is that sustainability is also vague in terms of who is doing the sustaining, and the vagueness here is just as troubling. The problem becomes apparent when we reduce the term to its root as a verb. Sustain dates from the thirteenth-century French word *sustenir* and the Latin *sustinere*, meaning to hold up or support something from below. As a verb it connects

a subject, the one who is sustaining, to an object, the thing being sustained. Yet who or what is the subject? Is nature supposed to sustain itself? Are humans doing the sustaining? Or is the Creator sustaining all?

Particularly when sustainable is attached to a human system such as agriculture or development, it is clear that humans are the actors, the ones doing the sustaining. The subject is less clear when the word is attached to an object such as the future or the planet. The future will come upon us, whether we like it or not. Our control over it is modest. As for the planet, our most misguided machinations are unlikely to imperil its multibillion year prospect. Do we sustain the future, or is our implicit goal here something quite different, perhaps to modify our actions so that the future is maximally shaped by nonhuman forces?

To make matters worse, sustainability is used interchangeably as both a goal and as a means to achieve the goal, whatever the goal might be. Means are sustainable, presumably, if they can be repeated, over and over. But to focus on the sustainability of the means is to ignore the kind of life or natural world that we want to produce. When used instead as a goal, sustainability sheds even less light. It leaves entirely open what is being sustained. We could link sustainability with a natural component such as biodiversity to produce a more coherent vision—the preservation of biological diversity. But why choose this component, or indeed any natural component? Why not choose to sustain current levels of petroleum usage or corporate financial performance (SAM Indexes GmbH. 2003), thereby divorcing sustainability from any direct link to the land, its functioning, and ecological science? Alternatively, sustainability could mean simply that we want to survive, in one form or another. Yet if our goal is merely to survive as a species—an age-old aspiration that does not represent an intellectual or moral advance—why not talk about the goal that way?

To note this means–ends confusion (which is heightened when sustainability is both the means and the end) is to uncover another drawback. Sustainability is simply dull, at least to the popular mind. Sustainability suggests a life that is stagnant or repetitive. It implies restrictions that keep us from growing and changing. For this reason, most politicians have steered clear of using the term. Even former Vice President Gore came to see that sustainability had no political traction (Calder & Clugston 2003). As a popular goal, sustainability has too little allure.

As our most careful observers have been telling us, our environmental problems are ultimately caused by bad human conduct. Our Earth is not a defective or subpar planet; we have problems with the earth because we do not live well on it. Our powers over nature are vast but not unlimited, which means we need to accommodate ourselves to nature more than we do. Yet sustainability, when defined so that humans are doing the sustaining, lacks this essential message of respect; indeed, it may or

may not have a moral element at all. People run the planetary system, so it implies, and are empowered to act as they see fit. When humans are the subjects, sustainability reflects the hubris that has long permeated our culture (Ehrenfeld 1978).

Sustainability is hardly more sensible when it means that we humans are supposed to sustain ourselves. Here the hubris is less but still substantial. Yes, we play a role in sustaining ourselves, but we depend ultimately on fertility cycles that are dependent in complex ways on intricate natural processes. Here again, to suggest that we can do the sustaining is to exaggerate our role.

The reality is that our prime responsibility is not for nature, for the future, or even for our own survival. It is for our own behavior. Because our behavior is causing our problems, our goal should be to make it, and ourselves, better. We should strive to improve our behavior patterns, not to sustain them, with the long-term aim of fostering and enjoying a good life, ecologically, ethically, and aesthetically.

## Sustainability and Pinchot

For many people, the core of sustainability as a conservation ideal is a vision of level or rising flows of those components of nature that humans use to live (Brundtland et al. 1987; World Conservation Union [IUCN] et al. 1991; RedefiningProgress et al. 2002; World Resources Institute 1993; Parris 2003). Sustainability, that is, is about natural resource flows and hence about the Earth's ability to produce them. In this familiar view, nature is seen in fragmented terms, with some parts valuable and other parts not. Value is determined by reference to human wants and to the human economic activities that natural resources make possible. Humans are thus set up as the sole holders of moral value. They are free to manage the land solely for their own benefit. Implicit here is the assumption that we can aggressively manage nature so long as we are prudent and scientific in doing so.

These ideas, of course, have a familiar ring to them. They dominate contemporary discourse. They are also familiar because they are lifted with little change from last century, from the resource-management thought of Gifford Pinchot and his colleagues.

Pinchot's limited conservation vision assured people that they could have it all. They merely needed to use better science and economics to get nature's resources flowing in perpetuity. Pinchot used moral language to condemn practices of his day: it was wrong to waste resources, he said, and wrong also for businesses to hoard land that ordinary people needed for basic living (Pinchot 1910, 1947). Yet Pinchot had little to say about nature's overall limits or about the wisdom of bending our lives to respect nature's time-crafted ways. Nature itself had no

intrinsic value and there was no need to protect species that lack direct human utility. No moral precept kept humans from manipulating nature for maximum human gain.

A clear example of how sustainability thinking has largely returned us to Pinchot's era is offered by current work on ecological footprint accounting (Chambers et al. 2000), touted as the "most helpful of innovative research initiatives to help us get a grip on what is meant by Sustainable Development" (RedefiningProgress et al. 2002: 4). The ecological footprint accounting program's aim is to "move sustainability from a concept to a measurable goal" and to "foster a sustainable world." The technique calculates the amount of nature that an individual's or nation's lifestyle requires. For proponents, it measures overall sustainability, which is defined as "the ability of a system to continue and maintain a production level or quality of life for future generations" (RedefiningProgress et al. 2002:2).

Footprint accounting is an advance beyond Progressive Era sustained yield in that it more overtly recognizes the limits of nature, yet its view of the human-nature link is unchanged: nature is a flow of resources, humans are the sole moral actors, and manipulating nature based on human knowledge is the proper mode of action. Its focus is chiefly on the output of nature's parts that have distinct economic value. Where is the recognition of our ignorance? Where is the moral call to protect all life forms? Useful as footprint quantification might be, it ignores and thus implicitly undercuts key elements of conservation thought.

One wonders, given the similarity between sustainability as thus understood and Pinchot's vision: Have we learned nothing since then? Did Pinchot get conservation right, leaving us today merely with the task of implementation? Writing in the second quarter of the twentieth century, Aldo Leopold certainly thought that he had not.

From the beginning of his career, Leopold viewed land as producing a wider suite of resources than Pinchot had in mind (Leopold 1918, 1921a, 1921b). His broadening of the resource definition, however, was only the first step in a long journey that took Leopold increasingly further from Pinchot's 1910 platform. Leopold moved beyond land management for particular resources and even beyond the idea that nature was sensibly understood as discrete resources. Ecology entered Leopold's thought more powerfully than it had Pinchot's. Leopold's moral and aesthetic visions widened to include the entire biotic community. By the time Leopold summed his own mature conservation thought after World War II, he was expressly phrasing it so as to emphasize this gap. "[T]he health of the land as a whole," he wrote in 1946, "rather than the supply of its 'constituent resources,' is what needs conserving" (Leopold 1946), with land defined broadly to include the soils, waters, plants, animals, and people. Pinchot's individualism had given way to Leopold's organic

vision (Newton 2004). Pinchot's aggressive land manager, using science to wring maximum yields, had given way to Leopold's humble farmer who was impressed by his own ignorance and who promoted the community's welfare as well as his own (Leopold 1939a; Freyfogle 2004). Pinchot's expert manager used empirical data and science to make all decisions. Leopold's landowner knew science's limits and intuitively mimicked nature to take advantage of nature's hidden wisdom (Leopold 1939a, 1939b). Leopold spoke of the "biotic right" of species and rare communities to exist (Leopold 1943, 1949). Arguing against Pinchot's stance, he decried the arrogance humans display when they divide nature's components into the useful and useless and freely ignore the latter (Leopold 1939b).

## Conservation's Growth

In his critique of Pinchot, Aldo Leopold spoke for himself, not for a movement, but his comments illustrate how far conservation has journeyed over the past century. One lesson learned is that management for sustained yield is far more difficult than those of Pinchot's era realized. Maximum yields and carrying capacities are challenging, if not impossible, to calculate. As fisheries biologist P. A. Larkin has concluded, "No one can deny that hypothetical animal populations can produce hypothetical maximum sustained yields, but the same cannot be said of real animal populations that are really being harvested" (Larkin 1977). Real environments are complex, interconnected and dynamic, and influenced by more factors than humans can monitor and synthesize.

Pinchot's adherents also failed to appreciate how efforts to maximize one species necessarily diminish the habitats and populations of many others. Aldo Leopold discovered this truth in the 1920s and 1930s when he tried to dovetail game management and forestry (Leopold 1937). In 1947 John von Neumann and Oskar Morgenstern gave the reality a mathematical grounding (von Neumann & Morgenstern 1953). In an interlinked system at a given time, it is possible to maximize only one variable. We cannot, as David Ehrenfeld has observed, make everything "best" simultaneously (Ehrenfeld 1978). "Multiple use" techniques and many forms of "ecosystem management" have merely kept us aimed at the elusive, Progressive Era goal of nondiminishing resource flows. Part of the problem comes, as Leopold put it colloquially, because yields can decline when communities get "out of order," not just from overharvesting. Conservation, wrote Leopold, "is keeping the resource [i.e., the ecological community] in working order, as well as preventing over-use" (Leopold 1939a). It was thus all the more important to address conservation problems at varying spatial scales (a reality that undergirds many watershed approaches to ecosystem management).

The growing field of conservation biology provides evidence of yet another conservation advance since Pinchot's day: our concern for all life forms, as species and members of ecological wholes. Conservation biology stands apart from earlier conservation in the moral vision that drives it: the belief that all life forms are worth preserving. It differs also in its land-management means. Species preservation requires an appreciation of ecosystem processes and a willingness to mimic them when disrupted, not just restraint in harvesting (Meffe & Carroll 1997).

Concerns about rare species and disrupted processes are parts of a larger shift in conservation toward broader senses of value and more complex understandings of human needs. Pinchot and colleagues criticized the excess materialism and shortsightedness of their days. Conservationists since then have gone further, criticizing our exaggerated senses of human understanding and our overreliance on empiricism. Lacking both full knowledge of nature and the precise language needed to talk about it, we turn to metaphors to capture nature's whole, even as we complain that our metaphors are inapt.

Serious conservation thought today includes, as a central element, a complaint against human arrogance, what David Ehrenfeld has usefully termed the "arrogance of humanism" (our belief that human reason and capabilities can solve all problems, typically through the use of technology that creates problems of its own; Ehrenfeld 1978; Ehrenfeld 2002). Conservation also includes a complaint against undue reductionism and the nature-human dichotomy, long a part of Western culture and a dichotomy that Pinchot's followers largely took for granted (Callicott 1998; Jackson 2002a).

Where Pinchot's conservation sought to promote flows of valuable resources, important elements of conservation today focus attention instead on the ecological whole, sometimes accentuating the biotic parts, at other times the processes that knit them together (Callicott et al. 1999). Humans as much as other animals are integral parts of food webs and biotic communities. The language used on this issue often varies—ecosystem health, biological integrity, and biological diversity, for example—yet the underlying vision in all cases is organic and quite distant from the fragmented view of a century ago. Those conservationists who follow Leopold's preferred path continue his particular focus on soil fertility in terrestrial systems and on the maintenance of intact, efficient systems for the cycling of nutrients from the soil, through plants and animals, and back to the soil (Estes & Palmisano 1974; Tilman et al. 1996; Tilman 1998; Jackson & Jackson 1999).

These three strands of conservation thought, now the most important, illustrate the many ways in which conservation has matured. Conservation is not sustained yield, dressed up in the retailored garb of sustainability, sustainable development, or even ecological footprint accounting. This truth ought to be clear, but it is not. Yet how can

that be? How can we be drifting toward a conservation ideal that, in its popular meaning, turns its back on the hard-earned wisdom of the past 80 years?

## Our Troubles Today

The mere fact that such questions need asking provides evidence that conservation is badly adrift. Where would one turn to find out what conservation is trying to achieve? No answer comes to mind, even for the well informed. The movement as a whole has no voice, no head, and no coherent message. Is it any wonder that conservation is easily ridiculed by critics and that even respected news outlets pay attention to criticisms of it that are seriously flawed?

## Ecological Ills Less Visible

As conservation has matured over the past century it has shifted far from Pinchot's concerns about resource flows. The problems with timber today, as with many other resources, have to do with overproduction and the ecological ills that accompany it. Indeed, the challenge of keeping resources abundant has largely been taken over by agribusiness giants such as Con-Agra and Weyerhaeuser Paper. Conservation condemns many industrial methods as unsustainable, as no doubt they are (Berry 1977; Orr 2002). But as long as resource flows are bountiful, it is hard to convince the public that a problem exists. Overall, the public shows little awareness that production methods are ecologically flawed. If sustainable means only that resources flow continuously and people get fed, we would seem to be doing just fine. Aldo Leopold highlighted this public inattention in his much-quoted lament: "One of the penalties of an ecological education is that one lives alone in a world of wounds" (Leopold 1953).

Paradoxically, the main strand of conservation today, with its concerns about the parts of nature that lack market value, is much closer to the preservation ethic touted by John Muir, Pinchot's chief opponent, a century ago. Like Muir, serious conservationists see humans embedded in a natural whole that has a wide range of aesthetic, spiritual, recreational, and utilitarian values. To mention Muir's name on this point, however, is to risk confusion, for Muir himself is poorly understood. A successful fruit grower and friend of wealthy people, Muir did not call for the preservation of all lands. Far from it, he envisioned a landscape of mixed uses, from the intensively utilitarian to lands that were most valuable when simply left as wildlife sanctuaries and recreational retreats.

## The Uncertain Human Role in Nature

Perhaps nothing shows today's confusion more than the trouble conservationists have had responding to the complaint that conservation understates the rightful role of

humans in manipulating nature. Most surprising here are the critics who see themselves as conservationists and who blame their colleagues for being misled, either by wilderness mysticism or by superseded assumptions (the “old ecology”) about nature’s inherent balance. Prominent writers here include Daniel Botkin, Michael Pollan, and Mark Sagoff, along with less visible writers who have touted the idea that nature as portrayed in conservation lore is chiefly a human construct. A common theme runs through much of this writing: humans can and should take charge of nature, molding it humbly but nonetheless forcefully to create the world they prefer (Botkin 1990; Pollan 1991; Sagoff 1997).

This highly popular writing is not without bits of wisdom. But mixed with the wisdom is the age-old call for humans to set themselves apart and dominate nature as they see fit. *Of course* humans must alter nature; that is not the issue. But how far, and with what aim? How far should we go in respecting nature’s processes and parts, and is there a grounded, ecological goal that should govern our work? Should we rise up and take affirmative charge of nature, as Botkin recommends, viewing nature’s dynamism as a dependent variable? Should we instead retreat to a more vague ethic of care, as Pollan proposes, in which we see ourselves as gardeners manipulating the land for aesthetic aims (Freyfogle 2004)? Or should we simply understand that nature has no set form—it is all process—and base our work on a human-created vision of nature created through democratic processes?

### The Special Challenges of Ecology

Conservationists have had trouble responding to these questions about the human role in nature. One reason is because the science of ecology is especially challenging, particularly when it comes to community functioning. An ecologist who enters a natural community is confronted with data far beyond her or his powers to collect and study. For every million bits of available data, the ecologist might do well to gather one. Necessarily ecologists must decide what types of data they want, whether for example, on species mix, population numbers, or energy flows. Who is to say, however, that these data bits are the most helpful and revealing? Who is to say that having accumulated such a small subset of data, we can make sound guesses about how a community functions (Worster 1995)?

### Finding Science’s Roles

Compounding the difficulties of scientific ecology are the troubles conservationists have in deciding how science is properly joined with nonscientific factors to formulate an overall goal (Lackey 2001; Freyfogle & Newton 2002). It is widely understood that we cannot jump from the “is” of unaltered nature to the “ought” of conservation aim. Nor is it simply a matter of taking scientific conclusions,

brushing them up a bit with “policy factors,” and then offering them as guidelines for action.

Real work is needed to decide the best way to use land conservatively. Science has essential roles in that work. But science’s roles are, paradoxically, relatively modest with respect to the specific task of setting a normative goal. A well-considered goal would take into account human utility, ethical and religious considerations, and the limitations on human knowledge and powers. To bring these components together normatively, much more than science is needed.

### The Fog of Social Construction

The social-construction-of-nature line of reasoning, particularly when applied to wilderness, has added further confusion to the conservation goal-setting process because of the nagging difficulties that conservationists (and many others) have had in sorting the true from the wildly false.

The social-construction theory emphatically does not mean that nature has no physical existence. Nor does it mean there are no places on Earth where the human imprint is trivial. Nature does exist, it has its own ways of functioning, and humans depend on it. Yet what is equally true—and here the theory does provide help—is that nature is far too complex for us to understand completely, which means that we have no choice but to simplify it in our minds.

We have no choice but to construct mental images of nature and use those images to live day to day (Freyfogle 1993). All human words are social constructs; every idea we entertain is a human construct. Thus, to say that *nature* or *wilderness* as terms or images are human constructs is merely to express a linguistic truism. Wilderness as an idea is no more a human construct than chair, book, or child. In the case of nature, wilderness, and a good many other ideas as ideas, our focus should be on (1) how we construct the terms, (2) what our constructions say about us as a culture, and (3) whether different constructions might be more useful. It would be possible, for instance, to define wilderness so that no place on the planet met the definition. But is that necessarily bad? Can we find heaven or Arcadia anywhere on the planet, and yet are they not useful constructs? Will we ever achieve pure justice or democracy?

The truth about social construction is this: When we deal with nature we deal with real places, yet inevitably we are guided in our dealings by our mental understandings. Indeed, this mind-nature gap is a big reason why we use science. Science brings the real and the mental into closer alignment by improving our understanding of the real. The more attentive we are to nature, the more our mental understanding of it approximates the real thing (Berry 1987; Tilman & Downing 1994; Jackson 2002b).

As humans we can manipulate our social constructions however we like. But our manipulations have nothing to do with real nature. What they affect is how we perceive nature, value it, and simplify it in our minds. Such constructions of nature are inevitable, but they are far from all equally good. Conservation needs good mental constructs—sound, well-grounded images about nature and how people fit into it (Bruner 1990; Freyfogle 1993).

As we see matters, these five factors have all contributed to conservation's current uncertainties about where it ought to head: (1) the near invisibility of ecological decline to the public eye; (2) the broad confusion about the rightful role of humans in nature; (3) the inherent difficulties of ecological science; (4) the uncertainties about science's proper roles in land management; and (5) the needless mental fog created by the social-construction line of thought.

### Assembling the Pieces

If we put to one side the main sources of our confusion today—the five factors we just described and the confusion about sustainability itself—what we find is that conservation does have solid, well-grounded elements. These elements provide a starting point to construct a coherent, appealing land-use vision.

One element of conservation today focuses on human health, individual rights, social justice, and various quality-of-life components. The environmentalism that bloomed in the 1960s centered on this element, with its worries that invisible chemicals were threatening lands, animals, and human bodies. More recently this element has expanded to include the various concerns commonly known as environmental justice. It has also taken the form of a proposal to add an environmental amendment to our federal constitution, one that would recognize an individual's right to a healthful or clean environment. The ideal of this conservation element is the healthy individual human, who enjoys ample access to clean air, water, and food.

A second element of conservation centers on the protection of biodiversity and the maintenance of basic ecological processes. The ideal of this strand is of a landscape that retains all or nearly all native biodiversity and that has its ecological processes either intact or mimicked.

Finally, there is the element that centers on the fertility of working lands, with fertility maintained by the kind of circular processes that nature features rather than the linear processes that characterize agribusiness. In recent years these issues have been taken up by the strand of conservation known as agrarianism (Freyfogle 2001). Agrarians dwell on the economics of land use and the challenges faced by landowners who yearn to use land well. They dwell on the plight of rural communities, which are vital, agrarians claim, to the ability of landowners to use

land sensitively. The aim of conservation for agrarians, therefore, is to cultivate a culture that honors good land use, that expects it of members, and that helps it come about.

These three elements do not encompass all of today's conservation, but they cover enough to enable us to see what conservation is all about. We can begin by noting the limitations of each. Health-based environmentalism is incomplete because it provides little sense of how humans depend on natural systems. Its focus is on direct threats to the health of humans living today, with little concern (typically) for ecological foundations. Agrarianism covers more ground, but it is typically weak on ecosystem functioning, landscape planning, and the ethical values of other species.

Then there is the successor to Pinchot's conservation, the new-style conservation that is concerned with biodiversity and ecological processes. The difficulty here is that the ideal landscape seems to be one in which people are unwanted, which leaves it open to the charge of misanthropy. In addition, it shows little interest in the economics of sound land use and in the necessity for a sound local culture.

These three elements provide useful materials to construct a more unified, encompassing conservation vision. Thoughtfully pieced together and with more links added—a task that we can only begin here—they can yield a unified goal that is far better ecologically, ethically, and culturally, than the vague idea of sustainability.

### The Need for an Alluring Goal

If conservation is to succeed, it needs to offer people an alluring vision of what life could be like, something far better than mere survival and a stagnant, repetitive existence. Sustainability hardly begins to fit this bill. How, then, to synthesize the three strands—the human health/social justice strand, the biodiversity/ecological process strand, and the agrarian strand?

Leopold sought to do just this when he called on his colleagues to develop a single conservation goal. Conservation was “a house divided” (Leopold 1940), he complained, and would not get far until it had a unifying goal. Leopold gave his goal the name “land health,” by which he meant a vibrant, fertile, self-perpetuating community of life that included people, other life forms, soils, rocks, and waters (Leopold 1944, 1949; Newton 2004).

Land health “expresses the cooperation of the interdependent parts,” Leopold asserted; “it implies collective self-renewal and collective self-maintenance” (Leopold 1942). As Leopold added ecological detail to this ideal, he returned again and again to the common signs of sick land: “abnormal erosion, abnormal intensity of floods, decline of yields in crops and forests, decline of carrying capacity in pastures and ranges, outbreak of some species as pests

and the disappearance of others without visible cause, a general tendency toward the shortening of species lists and of food chains, and a world-wide dominance of plant and animal weeds" (Leopold 1946).

Leopold's organic vision largely faded after his death, yet it has hardly disappeared. Among popular conservation writers, Kentucky writer/farmer Wendell Berry has similarly asserted that conservation should promote "the one value"—the health of the community as a whole (Berry 1993). Just as strongly as Leopold, Berry has also emphasized the community-supporting role of fertile soil, "the source and destination of all... by which disease passes into health, age into youth, death into life" (Berry 1977). Berry's writing, at the center of agrarian thought, has particularly helped to fill the gaps in the cultural side of conservation, although like Leopold he has offered few specifics on how to implement conservation goals at larger spatial scales (Freyfogle 2003). (Neither Leopold nor Berry, we might add, has tailored land health to the specific processes of large aquatic systems.)

## The Needed Goal

Conservation, we believe, needs a better goal than sustainability, or sustainable development, or any other variant of the term. Better land use must build on better culture. Conservation therefore needs to be about cultural change (Berry 1993; Meine 2003; Newton 2003). A successful goal needs to inspire. It needs to have positive overtones. It needs to have an ecological base, for those who want to dig deeply into it and challenge its soundness, recognizing our ecological connections and embracing our interdependence (Worster 1994; Callicott 2002). And it needs to challenge our excessive individualism and intellectual arrogance.

In our view, no term offers more promise than health, which connotes that kind of vigorous flourishing that conservation is all about. Health is an attribute, not of an organism in isolation, but of an organism integrated into a biotic community—or so the conservation movement needs to make clear. Health for conservationists, accordingly, needs to include healthy relationships, cycles, and functions.

Properly grounded in ecology and linked to the many ways nature promotes human welfare, land health can serve as conservation's overall goal. It would not be an overall vision of good human life in all its elements, and it would not be a substitute for sustainability when that term is used (as some use it today) as an all-purpose umbrella concept linking every desirable element of our social existence. If sustainability were to gain stature as an overall vision of human life on Earth, land health might properly stand as an independently viable component of it. Yet it is imperative for conservationists to have their own goal

and not merely contribute their conservation worries to the lengthy list of human challenges. To throw conservation into a larger mix without retaining an independent goal such as land health is to risk being lost as a separate, morally charged movement.

Land health ought to set the essential terms of how we live and enjoy the Earth. Inevitably, efforts to achieve other goals (health care, education, and social equity, for example) will bring enormous pressures to use lands in ways that clearly undercut land health. If conservation has no way to contest such pressures, save by recourse to the vague talk of sustainability, there is little hope that conservation's larger goals can be achieved in full or even in material part. If it merely supports sustainability—no matter how much conservationists push for sustainability to include good land care—it invites having its ecological concerns traded off freely against other sustainability elements. More proximately, without a separate, ecologically grounded goal, how can we even measure whether we are interacting with nature in healthy, enduring, ethically sound ways?

Land health, we realize, will not be easy to define, and it very much needs definition. Ideally, it would gain clarity through a coordinated, jointly sponsored effort by a variety of conservation groups and professional societies. Even with such an effort, land health will also be subject to the charge of vagueness. Yet the vagueness here would be far less than in the case of sustainability. Land health is plainly a goal (an end) rather than a means; it is securely focused on land and its ecological functioning; it omits the ambiguity and bad implications about who or what is in charge; and it more clearly encourages humans to adapt to nature's ways.

Given the fragmentation within the conservation community, we cannot be sanguine about prospects for a unified goal. A useful start, though, would be to cast aside sustainability and begin talking about its replacement. What is conservation for? What kind of society does it envision, and what will the benefits be if we head in that direction?

Good answers would greatly help the conservation cause in the decades ahead.

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