

# Sustainability, Natural Law, and the “Real World”

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In the realm of natural resource conservation, a very real limitation to sustainability, based on biologically reasonable and well-considered actions, seems to be the “real world.” Competent resource biologists with a long-term vision of sustainability who, for example, develop plans for endangered species recovery that include limits on suburban development, or try to limit old-growth logging to protect drainage basins, inevitably come up against powerful forces that quickly and efficiently disassemble such plans. These forces typically invoke what they call “economic reality,” or the “real world.” This alleged real world consists of powerful economic and political constraints that seemingly cannot be overcome, and border on the sacred. People who do not take them into account, and in fact do not place them at the center of any resource plan, are said to be idealists living in a dream world.

This typical and powerful “real world” view places short-term human interests, often expressed as immediate resource depletion and financial gain, far ahead of any long-term naturalistic or humanistic vision of sustainability. Current resource use, for this generation and even just this year (e.g., “get the timber cut and out”), is given far greater credibility than a long-term, inter-generational perspective. This folly is a very powerful and difficult one to fight. In essence, it places constraints of the “real world” on many resource conservation plans that would otherwise upset the *status*

*quo* of multiple-use, short-term economic gain, and political expediency. These constraints are often based on two-, four- or six-year election cycles, or even one-year budget cycles.

Are these constraints real and necessary? More significantly, are they the most important constraints on resource management, or are there larger issues that bear on sustainability? I will argue that these traditional views, powerful and pervasive though they may seem, are unrealistic and are in fact the very antithesis of the “real world”; nothing could be more artificial and ignorant of truly critical issues

and constraints on resource use and sustainability than short-term economic and political considerations. For such a view implicitly, if not explicitly, denies the existence of, or assigns a secondary and diminutive role to, something far more powerful in the long-term: *natural laws*.

Natural laws are in fact the only "real world" that counts in the long-term, and are the rules that govern whether humanity will maintain itself in a sustainable manner; yet, they are blatantly ignored by most decision-makers and many resource managers. For example, the traditional economic models that guided western industrial expansion for several centuries ignore natural law: natural resources are explicitly assumed to be infinite or totally substitutable, and waste products are assumed to be irrelevant (e.g., Simon 1981; see Daly 1991 for a comprehensive critique of these models). This is hardly the "real world." In fact, the entire "real world" as used today is an absurdity; it is based on socio-economic systems that are new inventions, several hundred to perhaps 1,000 years old at best, and artificial constructs of humankind. They have the potential to work sufficiently in the short-term and under low human population densities, with abundant resources and free ecosystem services, and with many costs "externalized." With high density and fewer resources, natural systems begin to break down, as we have seen through much of the 20th century, and the reality of natural law catches up to this "real world."

So let me define what I propose as the real "real world": physical, chemical, and biological laws that have op-

erated for not hundreds, but billions of years. For example, natural selection, the first and second laws of thermodynamics, electromagnetic forces, material and energy flow through ecosystems, and heritable genetic variation are all the real world. All have been operating in their present form for billions of years, and show no indication of fundamentally changing in response to human needs and desires. All operate independently of and in total disregard for what humanity does. None can be changed or engineered to suit our needs, despite the misguided and dangerous fantasies of some. Hardin (1993) relates the following, which nicely illustrates fundamental misunderstandings of natural laws:

[W]hen plans were being made in Stockholm for the 1974 World Population Conference in Bucharest, 'as each new perpetual-motion-machine solution was propounded,' to furnish the world with unlimited supplies of energy, one of the scientists would simply point out that it violated the second law of thermodynamics. Finally, in frustration, one of the economists blurted out, 'Who knows what the second law of thermodynamics will be like in a hundred years?'

This is a telling example of the type of pathetic and tragic thinking in our economic and political machines that creates environmental and social catastrophes. Yet, this is the type of thinking that has guided and led human actions with respect to resource use for generations. Natural law means nothing to short-term, narrowly trained thinkers.

By comparison to natural laws, the so-called real world of politicians, economists, and other supposed managers of our world is a trivial and fleeting experiment in evolutionary time and is meaningless by comparison to natural laws that are incontrovertible and inviolate. One can violate an economic or political law if one wishes: a person could steal money from a bank and possibly not get caught; another can murder and perhaps get away with it. But as talented as one might be in corrupt and unethical behavior, one still cannot violate natural laws that are inconvenient to their desires: we cannot by-pass entropy; we cannot ignore gravity; we cannot consistently destroy habitat, toxify groundwater, clear-cut old growth forests, or desertify grasslands through overgrazing or poor agricultural practices and expect natural systems to continuously support exploding human populations at ever-increasing standards of living.

Much of this comes down to attempted control and remodeling of natural systems to better suit human development in the short-term. The human species has adopted a perspective that we can and should control nature, even re-model nature, to our own ends. "Improvement" of forest stands or fishing returns through manipulation are good examples of remodeling nature. "Improvement" in these cases is merely a synonym for "changing nature for short-term human benefit." Ultimately, of course, this is a ludicrous and even childish notion, and has been coined "the arrogance of humanism" by Ehrenfeld (1981) and "techno-arrogance" by Meffe (1992). Attempted control of,

and technological mastery over nature is failing, will continue to fail, and can only result in great human suffering as the human population grows exponentially while ecological support systems continue to be modified or destroyed. The managerial emphasis instead should be to recognize natural laws of ecology and evolution, and work within their constraints. It is time to mature as a species and recognize and accept limitations, rather than forge blindly ahead with outdated, frontier mentalities of conquering and engineering nature.

Largely, this involves a major dose of humility, something many humans seem loathe to embrace. Accepting constraints and limitations is foreign to the engineering, techno-think mentality that has driven our civilization for the last two centuries and our resource agencies for this century. But technology is irrelevant with respect to normal functioning of ecosystems; it can only degrade them. The idea that nature may be "improved" is an absurd concoction of high-level managers who are either justifying their jobs or trying to re-design nature for short-term human gain.

Now there is nothing wrong with the latter in limited circumstances. Obviously, we need agricultural systems, lumber production, mining, and the like; nobody realistically expects people to just sit in unspoiled forests and worship nature. However, such activities should not be passed off as sustainable development. There is nothing sustainable about clearcutting ancient forests for lumber or clearing tropical lowlands for cattle grazing. They are one-way streets; we do not return to the original systems in

any meaningful period of time, if ever.

Real sustainability will require dropping the techno-arrogant approach to that part of nature that we truly are serious about sustaining. Rather than thinking like an engineer, we need to "think like a mountain" (Leopold 1949; Grumbine 1992). That is, managers of the natural world should think very long-term, accept natural systems as they are, and manage them with an appreciation for the dynamic states in which they have always been. They would do well to heed Rachel Carson's closing words in *Silent Spring* (1962): "The "control of nature" is a phrase conceived in arrogance, born of the Neanderthal age of biology and philosophy, when it was supposed that nature exists for the convenience of man." Natural resource managers should recognize the real world of natural law rather than human fantasies of how nature should work for our benefit. Management of truly sustainable systems must work within the framework of constraint and natural law. Political expediency and short-term economic gain have no place in truly sustainable systems.

We cannot simply re-invent natural biological laws to suit our image of short-term economic gain, four-year political cycles, and perpetually expanding economies. This flies in the face of everything we know about natural law and common sense. Yet, we have allowed politics and economics to emerge as the guiding principles that direct resource management, while ignoring the natural laws that guide the world from which we take resources. I cannot think of a more foolish and self-defeating way to approach human long-term well-being and sustainability.

The typical response to this attitude is that the system cannot be changed because of momentum. I counter that it *must* be changed if our resources and natural systems are not to be depleted and altered to the point of no return, leaving us eventually to face collapse of the very systems that support human life. The human momentum in behavior and philosophy that must be overcome is minuscule compared with the long-term results of ignoring natural laws and their forces. Continued disregard of natural law simply cannot be sustained in the long term, and resource agencies must not only accept this, but lead the way in changing the *status quo*.

So what is the conscientious and progressive resource manager to do? If we want to retain any semblance of ecosystem function, biological diversity, and long-term sustainability, not only of resources but of reasonable quality of human life, we need a philosophical renaissance that recognizes supremacy of natural law over artificial, human institutions, or what those currently in economic and political power tell us is the "real world." We must recognize limits to our control of nature, and limits to the ability of natural systems to suffer abuse upon abuse yet still provide the services we expect of them, including continued and abundant natural resources.

How do we do this? I believe education at all levels is the answer: education of mid- and high-level resource managers whose training and value systems are sadly out of date, of politicians and economists, who typically have no training or interest in resource management, and especially of the public at large. This can best be

done through absolute honesty by resource managers of the consequences of continued growth in human population and capital. We can no longer sugar-coat what we know is happening to the natural world through public relations blitzkriegs that serve only to continue agency funding and advance careers. I am reminded of my visit to an Idaho salmon hatchery, whose public displays praised the glories of salmon hatcheries, indicating what a wonderful job they are doing in protecting our resources. Yes, perhaps they are doing a good job, but their displays should instead tell visitors how unfortunate and desperate it is that hatcheries need to exist at all, and that they are last-ditch efforts at recovering the resources that our control-of-nature mentality has destroyed. They should be teaching that hatcheries will only be a success when they can be dismantled because of healthy runs of native fishes. Such honesty and revisionist thinking is long overdue in many of our resource agencies.

I realize that the public makes extraordinary, conflicting, and unrealistic demands on resource managers, but that is no reason to comply; the public and political leaders are generally ignorant of the ecological realities surrounding resource issues. Rather than accede to unrealistic demands based on ignorance, it is up to re-

source experts trained in the natural laws of ecology and evolution to inform, rather than conform to fantasy. We would not let the public guide medical professionals in the best way to perform a surgery, nor would we tell our auto mechanics how to fix a transmission. Yet, the public, largely through untrained political and business leaders with self-rewarding personal agendas, tells resource managers how to manage nature.

In closing, there is a saying that goes "unless we change direction we might just get where we're going." This is a sobering thought relative to resource conservation and sustainability. Directions in resource agencies must change, as must basic human value systems, if real sustainability is to be achieved. Directions must change by rejecting the artificial notion of the traditional "real world" of resource management, and accepting the realistic world of natural laws of ecology and evolution. Nothing short of 3 billion years of the history of life is at stake.

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