
Treading Softly

Paths to Ecological Order

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1

Within Our Means

Our global [ecological] footprint now exceeds the world's capacity to regenerate by about 30 per cent. If our demands on the planet continue at the same rate, by the mid-2030s we will need the equivalent of two planets to maintain our lifestyles. . . .

More than three quarters of the world's people live in nations that are ecological debtors—their national consumption has outstripped their country's biocapacity. Thus, most of us are propping up our current lifestyles, and our economic growth, by drawing (and increasingly overdrawing) upon the ecological capital of other parts of the world.

—*Living Planet Report 2008*

Soil degradation in one form or another now affects one-third of the world's land surface. . . . In China by 1978, erosion had forced the abandonment of 31 per cent of all arable land. . . . The United States in the twentieth century lost an amount of topsoil that took about 1,000 years to form, and currently loses 1.7 billion tons a year to erosion.

—J. R. McNeill, *Something New Under the Sun: An Environmental History of the Twentieth-Century World*

As much as 10% of global annual water consumption may come from depleting groundwater resources. . . . [By 2025], given the uneven distribution of these resources, some 3 billion women and men will live in countries—wholly or partly arid or semi-arid—that have less than 1,700 cubic meters per capita, the quantity below which people start to suffer from water stress.

—*World Water Vision: Making Water Everybody's Business*

Biologically and physically, we on this planet are living beyond our means. Economically, too, we are well beyond our means: consider current levels of personal, corporate, and public debt, as well as deferred infrastructure investments on water supply, sanitation, bridges, and roads. In terms of energy, the story is the same: over some 150 years we have grown accustomed to cheap, abundant oil, but now only the hard-to-get, energy-intensive, costly sources are left. If we turn to other fossil fuels, we are likely to bake the planet: so far we have burned the equivalent of roughly a trillion barrels of oil, enough to disrupt the climate; there is the equivalent of at least 4 or 5 trillion barrels still in the ground. Ethically, an order that bequeaths to future generations materials that present generations do not want and cannot handle—for example, nuclear waste and hormone-mimicking toxic substances—is also living beyond its means.¹

The four *E*'s—ecology, economy, energy, and ethics—point to an order that cannot last. The next era will be one of living within our means, one way or another. The only question is what kind of order will it be.

For those of us accustomed to easy money and cheap goods and fast transport, living within our means may well seem impossible. For those coming of age in times of financial crisis and, soon enough, energy and climate crises, it may well seem unavoidable. The challenge will not just be cutting back, restraining consumption, and eschewing debt, although these will be necessary and challenging enough. Rather, the challenge will be *living well by living well within our means*.

The aim of this book is to make such living seem possible, even desirable. It is to create images of the possible—images that are realistic when the debts and deferred costs and dependencies are taken into account. It is to imagine a material system, an “economy,” that is actually *economical* regarding the very resources it rests upon. It is to lay the groundwork for an *ecological order*.

So stated, this is a hugely ambitious undertaking. The requisite construction of an economical economy, one that does not waste precious resources—what I will call a “home economy”—will no doubt occupy societies worldwide for generations to come. Every step will be risky. Many people will resist, determined to make the current economy do the opposite of what is designed to do—grow endlessly.

The biggest risk, though, is not to start the new construction. It is to continue with business as usual, believing that greener and cleaner will do it. It is to pursue economic growth hoping against hope that sometime, somehow, such growth will only be abstract (in income, information, ideas, entertainment), not material. It is to extend the footprint yet further, as if we really do have a couple more planets to consume. It is to deplete fresh-water as if there is a substitute for water. It is to erode soil as if this civilization, unlike all others, can do without fertile soil.

Laying Groundwork

It would be nice if the current environmental predicament were a problem of the building. That is, if we knew that the ecological, economic, energetic, and ethical problems of this grand industrial edifice, this capital-intensive, labor-saving, high-consuming, debt-laden, cost-displacing, fossil-fuel-dependent economy, were located in the floors and walls, the windows and doors, even the rafters and roof, then all we would have to do is make the repairs and get on with things. All we would have to do is divert some resources from adding rooms and verandas to fixing things. Then we could get back to normal, back to business as usual, back to growing the economy, all as if what is down below, on the ground, doesn't matter.

Unfortunately, in this particular predicament—what might be termed a “global material crisis,” a crisis at once ecological

and economic—all warning signs point downward. They point to the very grounding of this grand edifice. And that grounding is both human-built (the foundation, the footings and cornerstones and drainages) and nature-built (the land, the water and air and soil), neither of which can be taken for granted, nor assumed to be self-renewing. What's more, although the natural grounding can carry on by itself without the human, the human grounding cannot carry on without the natural, without resilient ecosystems and renewing flows of water and nutrients. The human system depends intimately and ultimately on the natural system. This is a biological fact that no amount of growth upstairs can invalidate.

If the above position is disagreeable, if the claims about living beyond our means, about the nature of the economy, about the priority of foundations and grounding, and about the nature of the predicament and about biological facts are anathema to you, then read no further. This is not the book for you. There are books and articles galore about green buildings, fuel-efficient cars, new fuels, mirrors in space to reflect sunlight, holes in the earth's crust to pump waste. The great bulk of the funding for climate change and virtually all other environmental problems goes to such matters, along with assessments of the state of the environment. And the great bulk of what is written on the topic (the topic being global environmental change) is about greening up the economy (this very same economy, the one that must grow endlessly) and finding technological fixes (fixes that absolve us of responsibility for finding behavioral and structural fixes, the only changes that can endure).

Instead, this book is for those who know, at least intuitively, possibly scientifically, hopefully both, that marginal tinkering will not do it; neither will further documentation of the trends, not when nearly all trends point in the same direction: down to eroding foundations. This book is also for those who have

had enough documentation, enough of the gloom-and-doom. As valuable as it is to lay out the context and explain the science (see data quoted above, and more below, as examples), there comes a time when we must go beyond gloomy trends. That time is now. Citizens and policy makers alike rarely respond constructively to a barrage of scary facts and scenarios. Rather, I take it that people do better for themselves and others (and “the environment”) when they roll up their sleeves and tackle a problem, however big or small their contribution may be. They do better when they are realistically hopeful, engaged, and working with others.

This book, in short, is for those who know the problem is in the grounding—human and natural—and wish to get busy laying new groundwork. It is for those who know that what is needed is not a fresh coat of paint, however green; or a new set of windows and doors, however efficient; or even a new roof, however well engineered. It is for those who, despite such realizations, find it difficult to actually see what’s below, hidden as it necessarily is by all that is built on top, and who have trouble imagining what the alternative would be.

So this book is about imagining—about getting grounded ecologically and ethically. And because getting grounded is demanding, this book is also about hard work. Repairing the current edifice is, by comparison, easy, if ultimately futile. Laying groundwork is the task ahead; all signs—scientific, intuitive, experiential—point there.

Fundamental Shifts

The global climate is changing, local water tables are dropping, farmers and food distributors are not keeping up with demand, and economies everywhere, from the national to the international, are struggling. Everyone seems to agree that change,

serious change, is occurring. And many are deeply worried. Others, though, say things always change. Always have, always will. We just need to adjust, improve production, green up consumption, fine-tune the economy.

To my mind, these changes are quite unlike those of the past. And what they portend for the future is quite unimaginable. My thirty-plus years of observation and study, of teaching and tinkering have led me to conclude, only in the last few years, that *fundamental shifts* are now occurring, and more are on the way.

It is not just that things are changing; indeed, they always have. It is that they are changing in ways previously unimaginable to scientists, business leaders, policy makers, and citizens alike. In the scientific community, terms like *surprise* (which now has a technical definition), *threshold* (as in, “cross that threshold and your environment is completely different”), *irreversibility* (there is no going back, no recovery), *nonsubstitutability* (things like an atmosphere and water cannot be replaced), *unprecedented rates of change* (trends of the past are poor indicators of the present, let alone the future), and that all-purpose, ever-popular *crisis* (both fast and slow): these terms are now commonplace. This is not alarmism; it is a reflection of many people’s struggle to fathom fundamental shifts, changes for which there are few if any precedents, and thus unimaginable, and for which appropriate social responses are equally unprecedented and unimaginable.

So, for example, bark beetles, once restricted to two-year cycles by winter cold, are now reproducing annually. It is not just that they are devastating broad swaths of Rocky Mountain forests but that those forests may never recover. Frogs are disappearing worldwide. It is not just that it is a shame to lose species; species have always gone extinct, after all. It is that the mysteries of their disappearance, combined with their status as

amphibian “canaries in the mineshaft,” due to their thin porous skin, render conventional conservation irrelevant for frogs and perhaps also for a good many other terrestrial vertebrates. We cannot save one species at a time or even one habitat at a time when systemic instability is the issue. Sea levels are rising, already prompting island nations and other communities in low-lying areas to prepare to migrate. It is not that migrations have not occurred before, but that, with 6 billion people on earth, all the good places are taken. In these cases, and in so many more in the physical and biological realms, no one knows what to do, except proclaim more-of-the-same, only new and improved, greener and cleaner.

Turning to the social realm, the shifts are murkier, more contested, and yet no less fundamental. A 150-year “law” of oil supply says that when oil supplies are tight, prices go up, which stimulates investment, exploration, and technological innovation, bringing on more supply, all of which pushes prices back down. The cycle may take months or a few years, but it is a cycle, as inevitable as the business cycle itself, or the life cycle. Now, according to the International Energy Agency, the investments are not being made.² And even a few mainstream commentators are violating a taboo: they are saying that world oil supply has peaked, or is about to, which is to say that all the cheap oil is gone. Whatever the case, hardly anyone predicts a return to cheap, abundant oil.

If world oil has peaked, or when it does (after all, oil production already *has* peaked for more than thirty countries, including the United Kingdom and the United States), there is good reason to believe the back side of the oil production slope will not be smooth and gradual. On top of this, the price of oil (or of the various alternatives referred to as “liquid fuels”) may be the least of our worries. Available hydrocarbons exceed what humans have burned so far by a factor of at least four or five.

If what we have burned so far is enough to disrupt the climate, it strains credulity to believe the planet can still be habitable after burning that amount again, and again and again. All told, something has to give, and it will not be just incandescent light-bulbs and gas-guzzling cars. Again, no one knows what to do.

That economies must grow is as inviolate a truth in modern economies as an afterlife is in major religions, as elections are in democracies. Central banks such as the U.S. Federal Reserve are charged with stabilizing the currency so as to ensure growth. And not just any growth, but vigorous growth, “healthy” growth, the 4 percent or 5 percent, say, of most advanced industrial economies, and, elsewhere, even the 10 percent or 15 percent growth of rapidly developing economies such as China and India, and well above the anemic growth of a mere 1 percent or 2 percent that Japan suffered through much of the 1990s, its “lost decade.” (Zero growth, of course, is entirely unthinkable.) With adroit handling of the macroeconomic levers, principally the money supply and interest rates, they have been able to influence investment, savings, production, and consumption.

Now, with financial collapse and economic contraction worldwide, it is looking like the machine, the “normal economy” that could always generate “healthy” growth, has spent itself. What’s more, for “environmental issues,” it is apparent that the macroeconomic levers are quite irrelevant. Macroeconomic instruments can do little to correct underlying realities—realities such as the end of cheap oil and the disruption of the climate, realities that do not, it turns out, even enter the macroeconomic calculus, that barely get expressed in prices, let alone in gross domestic product (GDP). Financial instruments can create new forms of debt, but they cannot redress the natural and social debts that pile up. And economic growth has been

stubbornly resistant to decoupling from absolute levels of energy, material, and emissions growth.³

Now it really is about fundamentals, but not the fundamentals economists talk about—supply and demand, pricing, liquidity. Rather, today’s fundamentals go to the *foundations*, to an economy’s grounding in material sources—oil, water, soil, ecosystems, climate-stabilizing atmosphere—and to human capacities—a desire for economic security and meaningful work, for social engagement and neighborliness, for self-reliance and self-governance. The twentieth-century economy was normal only because it could afford its assumptions and the exploitative practices that went with them. And it could ignore consequences. It was adaptive in its time. But in our time it is fast becoming the *old normal*. It just will not do in the twenty-first century, not with 7, 8, or 9 billion people, not with the resource trends, not with current consumption rates. Proponents of the old normal have a hard time imagining that the twentieth-century economy might not be able to solve critical material problems, that markets and technologies will not rise to the occasion, that clever people with lots of resources and information and very sophisticated modeling cannot deal with disappearing ice packs, pest outbreaks, and the end of cheap oil, let alone “old problems” like poverty, disease, and hunger. For these new problems, *fundamental shifts* are in order to match the fundamentals of the *new normal*.

The New Normal

Yes, indeed, the foundations of a normal world, what we and our ancestors for generations have taken for granted, are being rocked. But the passive construction “are being rocked” is misleading. That rocking is done by agents—by us humans.

Yet not by all of us, really. The real agents are those who have written the rules and set the expectations that constitute the old normal. They are the ones who created a normal that included the following claims, however implicit—claims that are only now being tested over an ecologically relevant time period and only now being questioned for their moral grounding:

1. Endless material expansion on a finite planet is possible, indeed desirable, dependent only on human ingenuity and the willingness to print money, incur debt, and take financial risks.
2. Cheap energy will, if access is ensured, flow continuously from any and every pool, no matter the geology or culture or politics, to its highest returns, which is to say to wherever in the world buyers are willing and able to pay the price.
3. Consumer demand determines what producers make, so what is made, goods and bads, is what consumers (read, all people or society) want.
4. Risks can be managed, traded against each other and against economic production, including risks that cannot be foreseen, whose consequences cannot be contained, and whose time frame exceeds all human experience.
5. Economic, technological, and demographic growth will solve all problems, including the problems of economic, technological, and demographic growth.

These claims, built into a belief system and welded into place by theories of economic growth and technological innovation, lead people to believe, to have faith, to participate as consumers and investors, but not to question. Above all, once absorbed as normal, these claims allow no one to let on that the “old confidence” is eroding—that the game, by all physical, biological, ecological, social, and economic measures, is really a confidence game, and the con men always get out early, leaving the mess for everyone else. This is all taken as normal, because to

do otherwise is to expose the con. To question the assumptions, to challenge the prerogatives, is to crack the belief system. And then it all falls down.

But when we view contemporary patterns as symptoms of fundamental shift, however uncertain their final outcome, we see that the old normal hardly needs the questioning and challenging because it is falling of its own weight. Each irreversible shift, each wobble in the legs, each failure to shore up a chinked foundation assures it. Instead, what is most needed, and what this book hopes to illuminate and lay the groundwork for, is a new normal.

The time for a new normal is, indeed, now. On the environmental front, it begins with the observation, indeed the acceptance, that contemporary trends—environmental, economic, political—lead inescapably to one profound and disturbing conclusion: the era of “protecting the environment” is over, and the era of ensuring life support has begun. For several decades now environmental action has been a good idea to some, an annoyance to others. It has been a personal virtue, a cause, a rallying cry, a self-righteous plea, a haven for do-gooders and misfits. It has been a value preference, a lifestyle choice, a contest of lobbyists and litigators. More recently, it has been a product placement, a consumer choice, a marketing brand, a bandwagon to jump on and ride to ever greater commercial glory.

No longer. “Protecting the environment”—that is, saving the odd species, setting aside the random tract, tagging the occasional pollutant for phaseout, greening an automobile fleet—is now, in light of fundamental shifts, quite beside the point. The point is (and here I reach for phrasing that itself has not been trivialized by the pervasive gloom and doom of modern environmentalism) that what humanity has always been able to take for granted—ample soil and water, a stable climate—are declining and disappearing and the risks cannot be managed in the con-

ventional sense. The point is that present patterns of consumption are consuming life-support systems, locally and globally. The point is that what we take for normal is actually *excess*.

Yet what gets noticed as this age of excess falters is an increase in energy prices and threats to investments and jobs. Underlying it all, though, are vanishing natural resources and waste sinks (places where wastes can be deposited and eventually reassimilated), happening as if by magic. But the disappearing act is all of a piece with the energy and economic disruptions: it was by magic that we could displace costs so cleverly through the first couple of centuries of fossil-fuel-based economic expansion.

It is no longer accurate to say that the environment is “threatened.” Presumably designed to convey seriousness, this military/security metaphor suggests that the battle has yet to commence, that the threateners are gathering far off in a foreign place, that if we act now we can deter or repel the attack, that life can continue if we all come together to vanquish the foe. The foe is that enemy of the environment out there (or, even more preposterously but equally logically, the enemy that is the environment itself). Of course, there is no “other” that brings ruin to our resources; we are doing it ourselves. But now, with the aid of the physical and biological sciences, we see the enemy and it is us, especially the “us” who write the rules and capture the bulk of the benefits while others absorb the costs.

Clearly we need a better metaphor. In fact, we need better language, language that situates daily decision making, individual and collective, in natural processes, language that overcomes the us-versus-them of military metaphors, the build-a-better-world of engineering metaphors, the get-the-right-price and buy-it-and-sell-it of commercial metaphors. We need language that enables living *with* nature, not living *against* nature. (See chapters 10 and 11.)⁴

Beyond the Trends, the Critique, the Lament

So what to do? For me, given the trends and the need to understand them, it is tempting as an environmental scholar to commit my work to detailing those trends, to explaining them and suggesting where they are heading. This, after all, is what most environmental science is about; in fact, it practically defines environmental science. It is also tempting as a scholar and citizen to critique those trends, to get under the skin of politicians and corporate CEOs, to probe underlying assumptions about the way the world works (and does not), to expose who benefits from the status quo and who does not. It is even more tempting, I must say, to throw my hands in the air and cry, Woe is us! (Yes, I actually do that on occasion, but only in private.) Lamenting the trends and the deep doo-doo humanity is in is a favorite pastime of us environmental scholars, and of activists and policy makers. It may be a necessary personal coping mechanism, given the alarming nature of the trends. But beyond the temporary psychological benefit, it is generally not helpful.

In this book I do a bit of detailing of trends (in fact, I have done most of the “trending” already) and maybe two bits of critiquing. And I will resist the urge to cry out. Otherwise this book is not at all the typical environmental screed, or report, or analysis. It is an attempt to point forward—forward and, especially, around the corner. It is an attempt to find signposts, even bent twigs and a trail of crumbs on the path to a sustainable world.

This is an exercise, then, in “what can be” and “what should be,” what in my business we call “prescription” or “policy recommendation” or “normative theorizing.” I will just call it a “reasonable idea,” reasonable *given* the trends, *given* the deficiencies of more-of-the-same-only-greener-and-more-efficient,

given the human proclivities for material security (e.g., dependable, affordable, safe food, a roof over one's head) and meaningful connection via work and play and community, and *given* the ability of people to self-organize and provide for themselves. And so on.

So this is an attempt to go beyond the ubiquitous state-of-the-environment reports (which document the same trends, sometimes new ones, but almost all of which point in the same depressing direction) and beyond the listen-up-folks-this-is-serious and we've-got-to-do-something statements that often follow the reports. It is also an attempt to go beyond easy answers, beyond what often follows the "listen up" lament, to look not just a few steps forward but around the corner where extrapolations from the present tend not to go.

Looking around the Corner

There is no shortage of people who look into the future and tell us what will be and, with a few assumptions about values and capacities, what should be. But, to my mind, such prognosticators mostly gaze down the very road they are standing on. Where they stand determines what they see. Or, to put it in diagrammatic terms, prediction tends to be a simple extrapolation of a trend line, the line that has brought the predictor to the present. No other trend lines are relevant because there are no other data. Hence, the only empirically valid *prescription* is a historically established *prediction*.

Seeing the future in the past and present has a long and venerable tradition, one validated by the rigors of scientific and historical analysis. But the road we stand on today, where the ground is shifting, is not necessarily the road we will, or *should*, stand on tomorrow. The trend line of the past, with so many assumptions hidden in the data, in the historical facts, in the

choices made and rules adopted, does not necessarily point to the future. It does not point to the future that will occur or to the future that we will want. In fact, that past is typically a history of facts conditioned by endless frontiers and bounteous resources. Such a past offers little guidance when there are no more frontiers—when resources are exhausted, waste sinks filled, the climate destabilized. It offers little guidance when the task is to live within our means.

Instead, we need to look around the corner. We need to search for paths to what can be. With biophysical discontinuities reported yearly (even monthly, it often seems), with economic truths shown to be falsities as cheap oil disappears forever, with public intellectuals and public officials declaring the need for “fundamental” change, the same road, however engineered to be efficient or beautified to be green, is not a promising route. Yes, we have to start from where we are. But we also have to look for the road not taken, for the route with the fewest irrelevant assumptions, the least number of diversions. Turning the corner and searching for new paths will no doubt lead to many dead ends, as all true ventures do. But our venture, I argue in these pages, is toward new ways of living, of connecting to place and to each other and to natural systems.

To turn the corner, explore new paths, and back out of dead ends requires, among other things, warning signs. In chapters 3 and 4 I put up several of these, what I call “false paths” and “central myths.” In the concluding chapter, 12, I offer several more.

Toward Ecological Order

For a long time we have dealt with our biophysical environment by mining it, cleaning up the odd pollutant, and saving the occasional species (mostly the large, charismatic ones). Now

humanity has a stark choice: keep on mining and cleaning and saving, all the while depleting resources and filling waste sinks and permanently compromising regenerative capacities, or live within ecological capacities.

We are climbing a mountain ridge, each step more arduous and more risky. Treading heavily, we are loosening the very path we walk on. The ridge drops off precipitously, promising great calamity should we continue the ponderous trek. There are other paths with slopes not so treacherous that offer possibilities for stability, security, and fulfillment. Those paths, at once gentler and more manageable, challenging and more fulfilling, offer a good life, albeit with a lot less power, with a lot less material and energy. But unlike the “gotta move forward” path of material progress, with its endless climbing, voracious consuming, and devious disposing, these other paths require hard choices, the willingness to sacrifice, to exercise restraint, to say no, to think long term, to self-govern and self-produce, to follow nature’s principles: all very human things to do, to be sure, yet absolutely contrary to what is expected on that endlessly ascending path. What will be expected more and more as global ecological constraints tighten, is less stomping mightily, more treading softly.

So these chapters mostly locate on the gentler side, on the slopes and contour lines that still have hope, that still offer meaningful choices for individuals and communities and societies. There are no panaceas here, though—no quick fixes, no technological miracles, no green consuming that somehow displaces brown consuming. There are no lists of “simple things you can do to save the planet.” Here there is hard work and long negotiations, frustrating self-organization and monotonous self-governance. Here only minerals are mined, not aquifers and soil. Here the con artists work at the circus, not on Wall Street or in the halls of government. Here people are con-

stantly trying to figure out how to live well and live within their means: their financial means, their societal means, and, most fundamentally, their biophysical means. Here everyone fixes a gaze on the future, discounting nothing of true value, and, Janus-faced, also looks back into the past for nuggets of wisdom, dismissing no practice as necessarily “backward” or “traditional” or “primitive.” Here no one dares relegate significant decisions to “the market” or to boosters of a new technology or to absentee owners or to investors who can send billions to any place in the world in seconds but who, at the end of the day, have no place of their own. Here, in short, fundamental biophysical shifts require fundamental social shifts.

In an ecological order, I will argue in the coming chapters, a society’s material foundations are grounded in the biophysical; its daily practices centered on self-directed, self-restraining work, not the purchasing of goods; and its language imbued with ecological content and long time horizons. Overarching these elements is a norm against excess and an ethic for living within the society’s means, biophysical and social. The material side of this order I will call a “home economy,” implying, among other things, that this is an economy grounded in place.

The first step in constructing a home economy in an ecological order is to see the disorder in the current order (part I). The second step is to erect scaffolding for the home economy—organizing principles that are inherently ecological, sensitive to excess, and structured for restraint; practices that connect ecological and social values; and an ethic of the long term where thrift and prudence are paramount (part II). The third step is to acquire tools to work from that scaffolding. It is to frame problems, the requisite first step toward solving problems. Positive sacrifice, the opportunities of limits, and well-being through work are key concepts. Well-chosen metaphors and a pluralism of worldviews lead to levers for hopeful

change. All of this is straightforward in many ways, yet difficult nonetheless.

The difficulty, I must stress, lies not in the complexity of the task, the vastness of the problems, or the uncertainty and risks of attempted solutions. Rather, the difficulty lies in the way problems have been framed in the old normal, in the worldviews that have, for a century or more, been fabulously successful. Successful, that is, in extracting and manufacturing and expanding. Successful in finding frontiers, in displacing full costs in time and place. Successful in producing and consuming goods, where goods are good and more goods are presumed better, all as if there are no serious bads. Successful in conflating those goods with the good life.

A new success for a new normal is now in order. For this, new framing is needed, one that leads to a worldview that fits this world, the world inherently constrained by limits of all sorts, from the biophysical to the psychological. Constructing this worldview is the strategic imperative that matches the biophysical and social imperatives. It isn't easy, but as I hope the coming chapters will show, it is really quite straightforward.

Finally, in the coming chapters the reader will not acquire a recipe or a formula, and certainly no list of "easy things you can do to save the planet." Rather, if this book succeeds, the reader will come away with a positive, realistic, grounded sense of the possible. That sense, and these concepts and tools, can be applied in the full range of citizen action, from the individual to the collective, from doing good work to running a business, from organizing a neighborhood to leading a movement, from lobbying to lawmaking. These concepts and tools are designed for imagining, and then enacting, an ecological order. They are designed to make normal an ethic of living well by living well within our means.