

## The Constitution of Nature

### I.

Turmoil in the Middle East, Africa, and South Asia has plunged the world into yet another era of nation building. The United States is now engaged in the difficult task of reconstructing Afghanistan and Iraq, reportedly along democratic lines. Beneath all the rhetoric it is assumed that democracy is a useful model for severely conflicted Muslim countries with no experience of it and, further, that ours is an adequate framework in which to conduct the public business of any country in the twenty-first century. The first assumption has been challenged as premature or even naïve (Zakaria 2003). But it is the second, and more important, of the two that I question, and in particular I question the constitutional framework within which our own politics occur.

The U.S. Constitution, ratified in 1788, reflects opinions that originated in the Enlightenment era about many things, not the least of which is that ordinary people—within limits—are capable of self-governance. This document had the virtues of flexibility and ambiguity, which allowed it to frame U.S. political life from the time of its inception to our own time, through civil war and the transition from an agrarian society to an industrial and technologically advanced giant. It has provided, as Robert Dahl (2002) notes, a model of sorts for more than 100 other nations, but few have adopted its core assumptions about the actual organization of power.

In our own history, the transition of the Constitution from “charter into scripture” did not occur until

sometime in the late nineteenth century (Jones 1973:37; Kammen 1987). Since 1791 it has been amended 17 times without substantially altering the overall document. That fact alone suggests caution about changing something that has worked so well for so long. Or has it?

“Compared with other democratic countries,” in Robert Dahl’s words, the “performance [of the U.S. Constitution] appears, on balance, to be mediocre at best” (p. 118). His judgment is based on political criteria, but there are other and broader ways by which we might judge the Constitution. How well, for example, has it performed as a framework for protecting the waters, land, forests, soils, wildlife, and ecological integrity of the United States? A thorough reading of the evidence indicates serious decline in virtually every category (U.S. Geological Survey 1998; Ricketts et al. 1999; Abell, et al. 2000; Heinz Center 2002). Dead zones, extinctions, toxic pollution, soil erosion, radioactivity, urban sprawl, smog, industrial sacrifice areas, and changing climate are the ecological hallmarks of economic development in the United States. But do such things reflect failures of the Constitution, broader failures in our political system, or some combination of the two?

Such questions would not have been intelligible to the framers. For them the conquest of nature by science and technology was an unmixed blessing. In our time, we can see the limits of nature, some say its end. We know what they could not have known: nature is an intricate web of causes and effects often widely separated in space and time, and small changes can have very large effects.

We know, too, that what we mean by nature is complicated by our being bound up in it in ways that are hard to fathom. And we know, or ought to know, that we could bring it and ourselves crashing down gradually or quickly. The framers of the U.S. Constitution could not have foreseen this, although James Madison and Thomas Jefferson came to believe that the experiment with democracy might not last beyond the time of cheap land (Matthews 1995:210). We, however, know the ecological history of the intervening years and, arguably, have a better capacity to comprehend the future (McNeill 2000). All of this is to say that we can judge the Constitution and the political life it framed in an ecological perspective that the framers did not have. From this vantage point, three issues are particularly important: the inclusiveness of constitutional protection; the applicability of due process; and the fragmentation of political power.

### Inclusiveness

Although they began with the words “We the People,” the framers did not include women, Native Americans, or African Americans. The omissions were rectified by the Thirteenth, Fourteenth, Fifteenth, Nineteenth, and Twenty-fourth amendments. But no such protection has yet been granted to future generations, even though we know that the decisions and actions of the present generation cast a long shadow on their prospects in ways that could not have been known in the eighteenth century. Of the founders, Jefferson is notable for his worries about the intergenerational effects of debt, but no one

could have known about intergenerational ecological debt and such things as the extinction of species, climatic change, and toxic pollution.

“We the People” meant we the present generation, with the caveat that the framers intended to “secure the blessings of liberty to ourselves and our posterity.” To do so meant getting the framework issues right enough to balance interests, avoid the tyranny of either minority or majority, provide democratic representation, create national institutions, and establish a credit-worthy government. But the framers placed no restrictions on the rights of the living relative to those of subsequent generations. It would be a mistake, however, to infer that the framers had no further regard for posterity. To the contrary, I think they did but assumed that obligations to the future had been discharged by the creation of a durable national government. But many now believe that future generations need more explicit protection.

In 1986 the Supreme Court of the Philippines, for example, upheld the standing of children to litigate to stop deforestation on behalf of future generations’ rights to “a balanced and healthy ecology.” To acknowledge standing, the Court drew from no specific textual reference saying only that “These basic rights need not even be written in the Constitution for they are assumed to exist from the inception of humankind” (Ledewitz 1998: 605).

The proper question, then, is not whether succeeding generations have legitimate rights to a balanced and healthy ecology, but how those rights would be determined and enforced in the present. Given the intergenerational reach of technology, however, the issues go much past the protection of resources.

Do our descendants, for example, have a legitimate claim to a genetic heritage stable within definable limits (McKibben 2003)? Ought their interests to be weighed in decisions, say, about genetic enhancement of human intelligence and ex-

tension of the human life-span that would become permanent features or perhaps even the beginnings of a new species? If so, how would we know their preferences or best interests? Should their probable wishes or interests be considered in other decisions having to do with the development of nanotechnologies and artificial intelligence that might diminish their prospects or foreclose them altogether?

If such rights are extended to future generations, who will speak for them and how will those rights be honored in practice? Regarding the former, there are instructive precedents in trusteeship and court-appointed guardians for those unable to defend their own interests. And there are a variety of public policy tools to protect future generations, including land trusts, prices that include true ecological costs, depletion quotas or severance taxes that slow the drawdown of resources, taxes on pollution, and the police power of the state through regulation. Difficulties in applying these or other methods should be not be used to override the fact that no good argument can be made for the right of one generation to deprive subsequent generations of the ecological requisites necessary to pursue life, liberty, and property.

Going further, the Constitution deals solely with humans and their affairs, which means it is purely anthropocentric. But, there is a broader way to think about constitutions. French sociologist Bruno Latour (1993:13–15), for one, proposes that we distinguish between “the full constitution” and “the constitution of jurists” (Ledewitz 1998:233). The former includes the unstated assumptions underlying the latter and accounts for “the distribution of powers among human beings, gods, nonhumans; the procedures for reaching agreements; the connections between religion and power; ancestors; cosmology; property rights; plant and animal taxonomies” (Latour 1993:14). This larger constitution “defines humans and nonhumans, their properties and

their relations, their abilities and their groupings” (p. 15).

This is, I think, what Aldo Leopold (1949:204, 223) had in mind when he described humans as “plain members and citizens of the land-community.” But nowhere in the U.S. Constitution are the other members of the land community acknowledged. The framers assumed that nature and society were entirely separate and that humans were “free to reconstruct [nature] artificially” (Latour 1993: 139). Lacking constitutional recognition or protection, nature was there for the taking, and it was taken. As Howard Mumford Jones (1973:107) said, . . . there was a continent to ravage” and Americans took a “fierce, adolescent joy in smashing things—in stripping mountains to get at the ore, laying forests waste for their better timber, plowing up the plains whether normal crops could grow on them or not, slaughtering millions of bison . . . scarifying whole counties with the poisonous fumes of smelters, polluting rivers with sludge from oil wells, slaughterhouse, and city sewage. . . .”

The Constitution could, in time, be broadened to rectify past human wrongs through the amendments that extended the rights of citizenship to African Americans and women, but no such thing has been done for members of the land community. And some citizens are still caught up in the adolescent joy of smashing things.

Latour (1993) proposes “a different democracy. . . [one] extended to things.” Aldo Leopold (1949:203–204) similarly believed that inclusion of “soils, waters, plants, and animals, or collectively: the land,” in our definition of community was both “an evolutionary possibility and an ecological necessity” (Stone 1974). Leopold never wrote about the legal implications of this idea, assuming that the beginning point for law and policy was first to enlarge the boundaries of ethical consideration and that law would someday follow. If and when it does, there are difficult

issues to resolve about how rights and duties pertain across species boundaries. Is it logical or practical to include the rights of species? Ought we to consider the rights of ecosystems, as Leopold proposed, and what does this mean? How are we to discern the interests of nonhuman entities, or consider ourselves obliged when reciprocity is not possible? If these could be decided affirmatively, how might they be integrated into our complicated systems of politics and jurisprudence?

Again, complexities should not be used as an excuse to dismiss the issues and thereby the possibilities of extending constitutional protections in important and novel ways. Leopold believed that an ecological comprehension of our own self-interest would lead us, in time, to see that our well-being was inextricably tied to the health of the land community. Said differently, human interests and the efficacy of law would be markedly diminished in a ruined ecological system. What could it possibly mean for Americans to have their rights guaranteed in the Constitution in a land with a diminished biota, despoiled landscapes, polluted air and water, little topsoil, ravaged forests, and a climate growing more severe decade by decade? Rights under such conditions would be as worthwhile as having legal entitlement to an apartment in a demolished building.

### Due Process

The fourth amendment protects "the right of people to be secure in their persons, houses, papers, and effects." Yet these people, so secured, have dozens or hundreds of chemicals in their bloodstream and fatty tissues derived from exposure to the thousands of chemicals in our food, air, water, and materials (Thornton 2000). The privacy of the body has been invaded mostly without our knowledge or permission and with little accountability by those responsible. The ubiquity of pollution means that responsibility is difficult to ascer-

tain and that it is even more difficult to determine which of hundreds or thousands of chemicals, mixing in ways beyond our comprehension, have caused exactly what pathology.

Our knowledge of such things is inescapably general. We know that some of these substances, singly or in combination, undermine health, reproductive potential, intelligence, ability to concentrate, and emotional stability and thus the capacity to pursue and experience life, liberty, and happiness, but it is nearly impossible to know exactly which ones, in what combinations, and at what specific levels. We know that children are more vulnerable to chemicals and heavy metals than adults and that some physical and mental effects are permanent, but we cannot know in advance which children are most susceptible. We know, however, that the liberty of some to make and disperse toxic chemicals and heavy metals conflicts with the rights and liberties of those exposed. In some cases the effects will be manifest far into the future, placing perpetrators beyond the reach of law and leaving their victims without remedy. What, then, does it mean that we cannot "be deprived of life, liberty, or property," including property of the body, without "due process of law" as stated in both the Fifth and Fourteenth amendments?

The framers could not have known about carcinogenic, mutagenic, or endocrine-disrupting substances or radioactivity, but we do. For many toxic substances we know there is no safe threshold of exposure, as there is none for radioactivity. Chemicals that disrupt the endocrine system do their work in parts per billion, wreaking havoc on the development and immune systems of children. Had the framers known what we know about the ubiquity of chemicals and their effects, would they have extended the protections of due process to include the fundamental right of bodily integrity? And, should such protections be extended more broadly to include deprivation of other ecolog-

ically grounded requisites of life and liberty?

E. O. Wilson (1983:85) describes our affinity for nature as "biophilia," which he defines as an innate "urge to affiliate with other forms of life." "We are human in good part," he writes, "because of the particular way we affiliate with other organisms" (p. 139). Nature, then, is not something "out there," but rather something inscribed in us, and after several million years of evolution it would be surprising were it otherwise. Environmental psychologists similarly describe nature as experienced in childhood as a kind of substrate of our consciousness and emotions. Could it be that the disruption of natural processes diminishes the possibility of affiliation with nature? Does ugliness, in all its modern forms, diminish the human psyche and thereby the capacity for biophilia? Could it be that the diminished possibility for affiliation with a healthy nature reduces the quality of life? A growing body of scientific research suggests that this chain of reasoning is more than simply plausible. If so, the constitutional protections of due process ought to be broadened someday to protect those aspects of life and liberty uniquely and irrevocably grounded in the experience of nature.

### Fragmented Power

The framers created a system aimed to check ambition, balance competing interests, and eliminate the possibility of tyranny from a highly centralized government. To these ends, the Constitution divides power between the legislative, executive, and judicial branches and further between federal and state governments. Over time, the fragmentation of government powers has increased with the growth of federal agencies, departments, and programs. The result is that, with respect to environmental policy, the right hand of government often knows not what the left hand is

up to. The Department of Commerce, for example, promotes economic expansion, whereas the Environmental Protection Agency is expected to clean up the resulting messes. The Department of Energy promotes an energy plan with more nuclear power plants that, were it implemented, the Department of Defense could not conceivably defend from terrorists. The system of checks and balances, further, limits the ability of the federal government to anticipate, plan, and respond to systemic problems or, better yet, to avoid them altogether. But the larger problem is the mismatch between the way nature works in highly connected and interactive systems and the fragmentation of powers built into the Constitution. Nature is a unified mosaic of ecosystems, functions, and processes. Government, on the other hand, was conceived by the founders as a limited and fractured enterprise.

In the intervening years, government programs have been developed as disjointed and incremental responses intended to solve particular problems. Not infrequently, a solution to one problem becomes the cause of later problems. The Clean Air Act of 1970, for example, required the scrubbing of power plant emissions, but the substances so removed were deposited on land, becoming a land-use problem. The effect, in this and other cases, has been a kind of shell game by which problems are not solved but moved from air to water to land and back again. Governments commonly deal with the coefficients of problems, not with the system that created problems in the first place. Reduced automobile pollution is a worthy goal, but the problem is systemic, having to do with the lack of an intelligent transportation system that would include trains, bike trails, walking paths, and highways. Environmental laws seldom prevent or solve environmental problems. At best they render them somewhat more manageable while providing fertile ground for legal wrangling over the permissible

rates by which the citizenry is poisoned and the land degraded.

The intent of the framers to limit and divide power has become an impediment to the creation of effective environmental policy. "The Madisonian model," in Steven Kelman's (1988:49) words, "make(s) it more difficult to produce government action of *any* sort" (emphasis added). Relative to environmental matters and the rights of future generations, gridlock is now the default setting of U.S. government. Consequently, since the 1970s there has been virtually no advance in our ability to protect or enhance environmental quality. At best, air and water quality are in a holding pattern while other, more serious problems worsen.

## II.

Even though "it is time—long past time—to invigorate and greatly widen the critical examination of the Constitution and its shortcomings," in Robert Dahl's (2002:154–156) words, "public discussion that penetrates beyond the Constitution as a national icon is virtually nonexistent." Dahl believes the Constitution is insufficiently democratic. As presently interpreted, it is also deficient in ecological terms, and these are, I think, related problems. The framers' world views were a complicated mosaic of European and Scottish philosophy, agrarianism, frontier practicality, and Native American wisdom. And these men were businessmen with an eye to pecuniary advantage (Beard 1935). They had, as Dahl and others note, mixed opinions about democracy. But they did not know and could not have known how the world works as an ecological system and that the unfettered advance of technology would someday cast a dark shadow on a distant posterity. The question is whether that lack can be remedied by law, constitutional amendment, broader political change, or some combination of the three.

The most notable example of the first was the National Environmental Policy Act of 1970 (NEPA) that was intended "to improve and coordinate Federal plans, functions, and programs . . . to the end that the nation may fulfill the responsibilities of each generation as trustee of the environment for succeeding generations." The NEPA is an eloquent statement of a national environmental policy that had and still has great potential. The act mandated environmental impact statements for "Federal actions significantly affecting the quality of the human environment." But it has foundered, in the opinion of its principal author, on the shoals of presidential indifference, judicial misinterpretation, public apathy, broad lack of understanding of the environment, and the lack of "a great unifying goal," none of which are specifically constitutional matters (Caldwell 1998:147).

Much of the same can be said of the effectiveness of the Endangered Species Act of 1973, which also required an ecologically literate congress, executive branch, and public. The NEPA notwithstanding, the United States has no effective environmental policy and none whatsoever relative to energy use, land use, transportation, or agriculture. Instead we have a hodgepodge of poorly enforced laws, regulations, and practices, some of which work at cross-purposes, and no one of which prevents environmental degradation in the first place. Despite the intentions of Congress, environmental laws and regulations have been watered down for the convenience of major economic interests.

Regarding the second approach there have been three attempts (1967, 1968, and 1970) to amend the Constitution to grant rights to a healthy environment by law. But is it necessary to amend the Constitution to do so? Ledewitz (1998:620) believes it is not: "There is no impediment in the political Constitution to the derivation of expansive constitutional rights particularly

at a time in which the future of humankind may be at stake." The obstacles, in his view, are not problems resulting from the Constitution or the intent of the founders but rather the embarrassing ecological obsolescence of U.S. constitutional law from a legal community ignorant of the scale of environmental problems, and from the possibility that "the current generation may prefer its own wealth and convenience over that of future generations" (p. 631), which is a political problem. But despite the power of the idea and the urgency of the situation, Ledewitz concludes that "the time is not ripe" for expanding the scope of the law or passing a constitutional amendment. In his view the problem is fundamentally political and requires "a revitalization of our democracy" (Ledewitz 2003, personal communication). And that leads to a more complicated set of issues.

### III.

The founders' generation fought to overthrow the tyranny of the British monarchy, but tyranny in our time is far more pervasive and oppressive in two respects. First, monied interests in the form of corporations have acquired an undeserved advantage, a stranglehold, over the public interest. The public is losing control over much of the public commons: capital, information, airwaves, land, healthcare, employment, genetic information, and, if the acolytes of free trade have their way, the power to control our own economic affairs (Bollier 2003). Further, we the people are excluded from fundamental decisions about war and peace, nuclear weapons policy, and the growing number of decisions about technology with the potential to cause irretrievable disaster. Once, we became much exercised about "taxation without representation," but the present reality is more akin to "extermination without representation."

Second, tyranny is now intergenerational and to a great extent irrevocable and beyond remedy. The effects of climate change, loss of species, destruction of ecosystems, and tropical deforestation are global, threaten to erode the ecological foundations of civilized societies, and are for all practical purposes permanent. Looming on the horizon are technologies that, once deployed, could fundamentally and irrevocably alter the role of humankind in a world of machines designed to be smarter than people and capable of self-replication. In other words, the global environmental effects of industrial-era generations cast a long shadow on future generations everywhere, for all time. This is a tyranny imposed by ecological degradation, genetic pollution, destructive and uncontrollable technology, and worsening climatic conditions.

If such remote, intergenerational tyranny is to be avoided, the present generation must do it by restraining its appetites and behavior. Our time is far more portentous than that of the framers' and calls for a more thorough consideration of law, democracy, rights, and the public trust relative to the human prospect. Neither constitutional amendment nor law alone can solve what is inherently a political problem. But "a bankrupt politics of sideshow issues and elusive leadership that ignores the burning social needs of the day is not a politics that inspires citizens to action" (Cochran 2001:191). And citizen apathy is greatly fortified by a media given to reporting the scandalous and sensational and ignoring issues of real substance. We are rather like the lost traveler told by the mountaineer that "you can't get there from here." The changes that must be made are resonant with much of our history, best values, and notions of common sense.

There are two keystone principles. One requires that we act conservatively in cases where the risks of widespread, severe, and irreversible harm are high or simply unknown (Raffensperger & Tickner 1999). But

precaution is as commonplace in daily affairs as it seems radical in the realm of public policy. As individuals, we buy insurance, receive annual physical exams, and wear seatbelts, which is to say we exercise caution for reasons so obvious as to require no explanation. In medicine, the principle of precaution is widely accepted in the words "first, do no harm." In public policy, we must acknowledge a comparable logic in situations in which the risks may be catastrophic and our ignorance far exceeds our knowledge. It is one thing for individuals to incur risks to themselves and another thing entirely for a few to risk the welfare of many, including future generations, who have no say in the matter. The present situation privileges the rights of the elite, who cannot be held accountable if and when things turn out badly. As things stand, the benefits of risk are, in effect, privatized, while the risks are socialized across generational lines; this, by any decent reckoning, is unfair.

The other principle is grounded in our ancient concepts of rights. If, indeed, "all men [including those yet to live] are created equal, that they are endowed by their Creator with certain unalienable rights, that among these are Life, Liberty, and the Pursuit of Happiness," then no generation has a license to diminish the unalienable rights of subsequent generations by changing the biogeochemical systems of Earth or impairing the stability, integrity, and beauty of biotic systems, the consequences of which are a form of intergenerational tyranny. Ignorance can no longer serve as a good or plausible defense for actions that compromise the legitimate rights of present and future generations. Accordingly, a truly conservative and revolutionary reading of the U.S. Constitution would build on the idea that we are trustees poised between our forebears and our posterity. In trust we are obliged by decency, fairness, justice, and affection to protect, preserve, and honor the ecological prospects of existing

life and that yet to be. Without that guarantee, other purely legal rights can have little meaning. This obligation will require us to extend rights across generational lines by holding power accountable and restraining the advance of technology where it impinges on fundamental rights to life, liberty, and property now and in the future. It is absurd to believe that the framers, seven generations ago, would have wished us to preserve the letter of the Constitution of 1788 while permitting the destruction of the very ground on which that document and life itself depend.

I do not think we are as stuck as some would have it. First, across the political spectrum there is substantial and broad agreement about the sanctity of life—shared, for example, by those who oppose abortion and those who aim to protect species and landscapes. What at first appears to be an irreconcilable difference is rooted in a common commitment to protect life and the conditions that allow it to flourish. That commonality, were it tapped, constitutes a potent political force across what seem to be hard and fast political divisions. There are other principles that transcend the politics of right and left, including the public trust doctrine, which holds that the public good ought to take precedence over private gain. This, too, is widely accepted by the public, if not by those who gain much by the abuse of private gain. We do not lack for common ground; rather, we lack the kind of leadership capable of articulating the values that unite us.

Second, the time has come for an ecological enlightenment in law schools and in the courts. The law in all of its forms has many ecological implications that ripple outward in space and time. Those practicing law and those charged with its adjudication ought to be aware of those possibilities and the science by which they are framed and understood. Ignorance of ecology by lawyers and

jurists is no longer excusable as something pertaining to a separate and unrelated realm. And given the close relationship between law and politics, the effects of greater ecological understanding by the legal profession will eventually have great impact on our politics as well.

Third, it is time for bold action to head off the worst of what may lie ahead, beginning with a constitutional amendment guaranteeing the right to a healthy environment. If not now, when? The last such attempt occurred in 1970, but since that time public awareness of the scale, scope, and duration of the ecological crisis has grown considerably. Would such an initiative be controversial? Certainly, but less than one might fear. Let those who oppose the peoples' rights to clean air, clean water, open space, and healthy ecosystems stand up and say so. When they do, they will lose. Opinion surveys over three decades consistently show a large majority in favor of environmental quality, clear air, limits to sprawl, energy efficiency, renewable energy, and controls on pollution.

But the machinery that ostensibly connects public opinion with public policy is broken. The effort to establish and pass a constitutional amendment would have salutary effects. It would focus what is now a scattered debate on the essentials of our relationship to our children and their children. It would end two decades of stalemate on environmental policy. It would exert a steady gravitational pull toward the reconciliation of human interests and ecological realities. The full effects of the Thirteenth, Fourteenth, and Fifteenth amendments, for example, were not felt until after the civil rights legislation of 1964 and 1965, but the power of the law, if dormant, was never extinguished. The acknowledgment of the right to a healthy environment now and for those yet to live would clarify necessary changes in policy having to do with taxes, prices, public expenditures, the proper control of

corporations, and the directions of technology.

#### IV.

The U.S. Constitution is not just words on paper. It is a living, evolving document. Its great virtue is its "extraordinary capacity for self-revision" (Sunstein 1993:354). It is "an open and revolutionary document. . . [and] need not be interpreted to stand mute while the environment and the interests of the future are sacrificed" Ledewitz (1998:620, 567). It is time for our understanding of that document to be reconciled with our knowledge of natural systems and our growing awareness of obligations and rights that extend broadly throughout the community of life and outward in time as far as the mind dares to imagine. And for those intending to aggressively spread the U.S. version of democracy far and wide, it would be good for this example to be one that preserves a habitable Earth on behalf of those yet to be born.

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