

Social Morality & Resource Use

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Prologue

This essay on environmental ethics and related subjects came to the editors, somewhat by chance, nearly a year ago. The author did not submit it for publication—to him it was obviously far too long for the *Forum* and probably too personalized. The present version was assembled in the last year of the Reagan administration and thus was out-of-date. It said irreverent things about cherished institutions—such as the U.S. Congress, which, after all, must be something of a model for the now-emerging democracies of the world.

I first met Durward Allen in 1957. As a park ranger in the winter of 1955-56, I accompanied NPS biologist Jim Cole in an attempt to

track wolves on Isle Royale with the goal of determining wolf numbers and their effect on the moose population. It was soon evident that more than two guys on snowshoes for a month each winter was needed for the job. Gordon Fredine, in NPS's Washington Office, secured Dr. Allen's interest in this problem, and the rest is history—the world-famous Isle Royale study of wolf ecology.

Before becoming Professor of Wildlife Ecology at Purdue University, Dr. Allen had served as a research biologist with the State of Michigan (in charge of Rose Lake Wildlife Experiment Station), and as a division chief in the U.S. Fish and Wildlife Service in Washington, where he had acquired an early interest in Isle Royale and its wildlife. Durward served on the Secretary's Advisory Board for the National Park System in the 1970s, where, among other things, he chaired a special task force to make a "Report to the Secretary of the Interior James G. Watt" entitled "Review and recommendations on animal problems and related management needs in units of the National Park System" [*Forum* 1(2):9-32].

Among his many publications, both scientific and popular, are *Our Wildlife Legacy* (Funk & Wagnalls 1954, 1962) and *Wolves of Minong* (Houghton Mifflin 1979). I have known few who could express so elegantly the intricacies of biological fact, and both the subtle and the forceful textures of personal conviction. The *Forum* editors have agreed: this should be in print and this is a *forum*—ideas is what we're about.

.....R. Linn

Not unusually, the Greeks had a word for it: To them *ethos* meant the character of a people, their common standards and accepted code of behavior. No doubt then, as now, it was understood that any simple description of a human society (warlike, frugal, etc.) does not imply a total fit. Individuals go their way, especially in attitudes toward mores and scruples. In the United States we have been permissive about matters of personal privilege.

In the common use of derivative terms, *ethical* has a positive meaning; it connotes standards people regard as right without necessarily knowing why. *Unethical* implies behavior that is unacceptable, although this tends to be a bland indictment. It dilutes culpability with allowance for ignorance or poor judgment. It is the first category in a cline of social malfeasance from bad to worse to intolerable. As a second-class offence, *vandalism* usually means the intentional destruction of property. Vandalism on a grand scale (e.g., arson) or outrages against persons become *criminality*.

These terms overlap in a continuum of somewhat vague meanings. Their significance for immediate purposes is that plausible judgments of what is good or bad for us might sometimes be fallible. In eventual consequences, an unethical course of action could be more costly to many people than a capital crime against a few. To be coldly realistic, even human beings are replaceable; country is not.

I am aware that such simple truths do not attract much following, but they are time tested. They originate from what goes on

in natural systems, where the sum of events and processes makes possible the survival of species. By analogy, we might conclude that the weal of humanity is best served by concern for the public interest, even at a cost to individuals.

My purpose in the present inquiry is to appraise the importance of a postulated "ethic of the future" in American culture. Are indigenous ethics a significant guide in decisions affecting long-term public welfare? More specifically, is this true in our use and custody of the human environment? What is the testimony of historic programs—resource, economic, and social? A feel for where we are at this time and for where we are headed may be obtained from a sampling of recent literature.



In its implications for Earth management, the most far-reaching statement of an ethical principle was the original definition of *conservation*, which Gifford Pinchot (1947, p. 326) attributed to W. J. McGee, "use of the natural resources for the greatest good of the greatest number for the longest time." It is likely that publication of this policy concept was Pinchot's most valuable service to his fellow men, but in applying it he introduced a judgmental problem: What, indeed, is the greatest good, and how long is the longest time?

Frequently Pinchot gets dishonorable mention in accounts of what is regarded as a major disaster in the history of national parks. He was not a parks man. He believed in cutting trees, grazing ranges, digging out minerals, and impounding waters *where they are*.

Shortly after 1900, San Francisco was looking for an additional source of domestic water supply and electric power. Various alternatives were available, but a possible reservoir site in Yosemite National Park was especially promising. It was public land. With proper strategy it might be secured at no cost—an advantage worth some \$200 million (Hays 1959, p. 192; Shankland 1940, p. 47).

On a map, Yosemite park (established 1890) is somewhat egg-shaped, the big end at the north. Two major streams flow westward out of the Sierras through spectacular valleys that divide the park roughly into thirds. The southern valley, traversed by the rushing Merced River, is the world-famous Yosemite. The northern valley, the Hetch Hetchy with its Tuolumne River, was once considered a scenic runner-up to Yosemite. After a long and bitter controversy, which ended in 1913 with passage of the Raker Act, it became Hetch Hetchy reservoir.

John Muir and his Sierra Club had vigorously defended the integrity of the park. They lost out to the San Francisco partisans in a legislative struggle that involved Interior Secretary Garfield, Pinchot, Theodore Roosevelt, and development-minded members of Congress.

Hetch Hetchy is remembered as the only major invasion of established national parks for the impoundment of waters, although western water interests, their political representatives, and cooperating bureaus have mounted numerous campaigns to that end. Perhaps the greatest of unfulfilled water-storage ambitions have cen-

tered on the Grand Canyon and what is left of the Colorado River. However, the lake and chasms of Yellowstone, and other attractive sites in the supposedly inviolate great *national parks* (as defined) have had a magnetic fascination for developers (Shankland 1970, p. 212; Swain 1970, p. 122). If these are not under water, it can be ascribed to the strenuous opposition of citizen organizations acting under the aegis of a cause they still call conservation.

Within limits, those defenders can be forgiving of Pinchot. He could not have imagined an Earth with 5 billion inhabitants, or his own country approaching 250 million (by the time this gets to press). In his day roads had not yet dissected all the wild areas, and ORVs had not been invented. His view of wilderness advocates as a coterie of impractical visionaries is understandable, and it has enjoyed continuing popularity. Pinchot's total devotion to "use of the natural resources" has been handed down unblemished to generations of willing receptors. In resource polemics of today, the label "preservationist" has disparaging implications of historic origin.



Water developments on the grand scale provide a record of historic controversies. As fostered by the U.S. Congress, they have had continuing attention in citizen protest and a highly critical literature. Elsewhere I have reviewed some causes of the popular dissatisfactions (Allen 1985, pp. 35-61).

These originate from questionable or patently unsound projects that have been promoted by the

members of Congress for political "pork barrel" benefits. Frequently costs and values have been misrepresented and environmental damages ignored. The construction agencies (Bureau of Reclamation and Army Corps of Engineers) have been dependably cooperative. Local and regional business interests combine with organized labor to work for any spending of public funds in their communities. Rewards accrue to politicians at all levels in the form of campaign contributions.

The impartial evaluation of project proposals is impaired by these many conflicts of interest. It is further complicated by a prevailing custom of horse trading among members of Congress; they reciprocate favors by voting for nearly anything in which their colleagues may want to invest public money.

Most of the benefits in water storage and use are temporary. Reservoirs fill with silt and lose capacity; irrigated soils accumulate an overload of minerals; aquifers are drawn down, with consequent stress to dependent communities. The public does not know about such things. They are not supposed to know. The great plans do not tell them.

The record since Hetch Hetchy has been a mixed bag of water manipulations great and small, good and bad. It probably defies any total appraisal, but water works constructed by the Bureau of Reclamation up to 1977 had cost more than \$11 billion (much of it real dollars) and included "322 storage reservoirs and 345 diversion dams, along with thousands of miles of canals, pipelines, drains, and tunnels" (Worster 1987). Accom-

plishments by the Corps of Engineers have been effectively presented in their poorest light by Morgan (1972), an exponent of upstream (watershed) hydrology, who was FDR's first chairman of TVA.

In recent years a slowing down of public works initiatives has suggested changing attitudes in the Congress. As of the end of 1984, Postel noted that no new water projects had been authorized since 1976. Previously authorization bills had been introduced about every two years. "More importantly, actual funding for water project construction (excluding wastewater treatment) has declined steadily over the past eight years; appropriations in 1984 were about 70 percent less in real terms than in 1976."

The indicated change in outlook seemed a bit unreal for many conservationists and their organizations, long inured to the hardships of eternal vigilance and fundraising. Impressions of progress were contradicted by a perceived growing audacity in widespread demands for federal dollars. Articles in *Science* and elsewhere bespoke professional alarm over the increasing disposition of universities to follow the political route in seeking government funding for research and educational facilities (see Walsh 1987). By precedent, federal grants had been dependent on the impartial findings of peer review.

In any consideration of questionable practices it is implicit that all members of Congress were not created equal. Every generation of members includes some with strong convictions about resource conservation (see Ottinger 1969). Their

parentage of constructive legislation attests to good intentions in defining the public interest. Their opposition to the worst water-project abuses (outside their own states) has enabled citizen organizations to arouse public interest and turn back some far-out proposals.

So, in the late 70s, was a new kind of ethic at large in the Congress? Were the burdens of cumulative cost and environmental penalties finally being recognized by these representatives of all the people?

Somewhat compatible with this notion was a suggestion by Postel (1984, p. 35) that

Tight capital and \$18 billion deficits are forcing to an end a long era of massive water subsidies. Historically, few of these projects have returned sufficient benefits to justify their high costs. An example is the Central Arizona Project (CAP), a large diversion of the Colorado River to supply the growing population in Arizona. Long before the first drops of CAP water were destined for Phoenix and Tucson, economist Thomas Power of the University of Montana stated that not only was the project's benefit-cost ratio less than one, "it may well only return a few cents of each dollar invested in it."

It can be added that, aside from the limited values CAP offers to Arizona, the economic analysis by Power (1978) indicated that the (half-completed) project "will cost the U.S. taxpayer more than \$5.4 billion while yielding no positive net return to the nation." An updated cost estimate had been \$3.5 billion. Such an overrun produces minimal trauma in a kind of enter-

prise where the spending of government money is a primary objective.

Any illusions of ethical laundering in Congress were weakened late in the 98th session (1984) when an omnibus water resources bill was hastily assembled. The House version "included some 300 new projects at a cost of \$18 billion. The more modest Senate bill still included some 130 projects at a cost of \$8 billion" (Barton 1985, p. 231).

However, both bills did include a number of positive measures for conservation. They moved to reduce the \$43.3 billion backlog of inactive or incomplete projects and to prevent such backlogs from accruing in the future. The House bill immediately deauthorized 330 projects at an estimated cost of \$11.1 billion and automatically terminated authorization for those projects in the bill if construction had not begun in five years.

To encapsulate recent progress, in November 1986 the national legislature got back to water business, and 296 projects were authorized. However, "none of them was on the scale of Glen Canyon or Grand Coulee and all of them henceforth had to find matching funds from local sources, a requirement that likely will force many to be cancelled and others to be reduced considerably in size." (Worster 1987).

If such a policy holds up, it is indeed a welcome development and one reminiscent of an ethical approach. However, indicators remain that the work of conservation organizations is never done. A late issue of *Audubon Activist* (Nazor 1987) describes a Corps of Engineers remodeling of the Red River, which bisects Louisiana from northwest to southeast. In its natural course the waterway travels

through some of the state's most productive lowlands.

Making the shallow, meandering river navigable will require five locks at \$100 million apiece (two of which are virtually complete) and numerous realignments. The project requires dredging and channeling of the river to a nine-foot depth...

[A former] Assistant Secretary of the Army for Civil Works, and currently with the Office of Management and Budget, thinks the project is economically unsound and should not be built.

.....A small group of property owners, construction workers, and businessmen along the Red River claim that the waterway will help the economy—and so it will, in the short run.

But this project, once built, will do little but encourage more development on a floodplain, and destroy hundreds of thousands of acres of wetland habitat in the process. Every taxpayer in the United States will pay his share to keep the sandy Red River perpetually dredged...The wood stork will no longer find sandbars to feed on...No one knows how the native fishes and freshwater shrimp will be affected.

Government management of the nation's water resources during nearly a century has been a curriculum of follies featuring misapplied engineering skills and a jackpot of public funds. These assets could have been better employed. Information has not been lacking—the public press and scientific literature are full of it. Conspicuously missing is an ethical standard of using lands and waters in accord with natural functions and relationships.



Aside from their outsize price in dollars, it is evident that the great public works projects have important environmental costs. One expects them to be undertaken with caution, but this obviously is not always the case. With that forethought, it is appropriate to question the handling of other public business of great consequence. A problem currently on everybody's mind is the control and management of the national currency; ethics might well be involved.

I approach this subject recognizing that there are intellectual environs where a person with only lay beliefs should fear to tread. In personal learning I have skirted the field of economics, aware of trammeling inabilities and a provincial tendency toward value judgments.

However, I have read "The affluent society" (Galbreath 1958) with admiring attention, and I have sought the counsel of authorities. One of them told me that most economic studies confront the problem of "how our system works." It occurs to a biologist that the economy is an artifact of human manufacture, with tenuous status as a system. It may not work at all. In conflict with this despairing view is the hope that time and professional diligence can create something orderly and durable.

An unreconstructed economist who had responsibilities in government fended off impolite queries with the explanation that most professionals in the field are interested in *what is* rather than *what ought to be*. Happily, on that score there is evidence of a maturing sense of responsibility. In witness is my previous reference to a critical

analysis of the Central Arizona Project by economist Thomas Power. Even more to the point is the work of Herman Daly (1980, 1987), whose economic expertise is directed to the problems of a steady-state society. Many important jobs await the attention of economists. So what does all this have to do with ethics?

It comes back to the Congress and a policy course that could, at least in public perception, vitally affect all we do in resource and social affairs for the present and in decades ahead. Inflation of the currency is intimately conditioned by economic theory and practice. It is subject to political influence and thereby a problem in ethics.

As one who lived [sic], worked, and went to school during the 30s, I share the Galbreath apprehension that the great depression could be repeated. Events during the war and its aftermath lead me to conclude that during this period, by legislative bits and pieces (and with guidance from organized labor), Congress made inflation the law of the land.

For a time, the policy of spending more than you take in can be sanctioned by the Keynesian (1935) kind of designed manipulation. If it becomes sustained behavior that cannot be abandoned for political reasons, that is something else, including negative ethics. Galbreath did not dwell on the early phase of inflation, although he stated emphatically that the budget could not be cut. More recently (1981, p. 284) he observed, with perceptible contrition, that...

.....on economic foresight one must be content with modest claims. I did not at all foresee that inflation would be-

come a seemingly permanent condition. Nor did I fully see that the organizations created to express countervailing power—farm organizations, trade unions—would, in conjunction with the corporations whose power they answered, become a cause of that inflation.

Today the congressional fight against inflation features much elocution—and giving more money to everyone. Obviously, the members are prey to immoderate demands by a host of entrepreneurs and self-interested cohorts of the citizenry. As the handouts and entitlements become established, they acquire the dignity of "rights," and any backsliding in support could get a congressman into trouble.

The tangled web thus woven is a distasteful commentary on representative government. A former Secretary of the Treasury told of his learning in office (Simon 1978, p. 100):

Deficit spending....generated its own pathological form of "bookkeeping." Politicians discovered that they could launch federal programs and win the enthusiastic support of grateful voters without taking a penny out of the Treasury. As every obligation fell due, all the government had to do was to sell new bonds to replace the old ones. As government borrowing became astronomical, a new "convention" in record keeping gradually emerged....it consisted simply of hiding the true amount of the debt.

Thus, in addition to the recorded debt, there developed massive forms of debt that went unrecorded in the official budget numbers: price support programs and a variety of public assistance and social welfare programs to all classes of society. These and many other governmental obligations

showed up in the budget, if at all, as footnotes; they were casually described as off budget items, and the citizens were not aware of them.

Their ignorance has been contrived by politicians, who have chosen to keep this information from the public's attention, and the choice is often conscious.....Congress knew what it was doing. There was only one possible dupe: the American people.

More recently, David Stockman (1987) recounted in detail his failures as an idealistic young budget director who strove for more than three years to carry out a presidential mandate to reduce federal expenditures. The sustained effort got nowhere because members of Congress refused to give up the multiple gratuities that secured their continuance in office.

How do we deal with what has become a besetting civil frustration? Some economists are not sure it needs much attention. Abroad in the land is a concept that "we owe it to us; therefore the debt of \$2.4 trillion is an equal and opposite asset." This rationale has puzzling aspects, but it gets serious discussion, most recently in *Science* (Eisner 1987).

I have no further comment. I take refuge in my right to avoid self incrimination.



One does not for long belabor the imperfections of government without a sense of plagiarism. This has been a well-trodden path of social reform since Will Rogers took to chewing gum and twirling ropes. A still-unanswered question is whether the election or appointment of a citizen to high office—by implication a commitment beyond party or

region—carries with it an obligation to lay aside extremes of personal conviction in conducting the public's business.

Few would claim that in practice it works that way. Current handling of environmental affairs indicates administrative preoccupation with economic returns from resources but not with provident management. An aversion to applications of scientific knowledge in problems of human biology is especially evident. Today's overshadowing global issues concern population and environment—a complex of ecological relationships where one begets the other and which must be dealt with in a one-world context (Repetto 1987).

Among people not conceptually encumbered, the foremost development in human biology has been the great irruption of population during the past two centuries. The inhabitants of Earth reached a billion in the early 1800s. By 1930 that statistic had doubled, and since then three more billion have been added. This exponential increase resulted from public health programs that commonly reduced death rates to less than half the global birth rate. The present world population of over 5 billion represents a doubling in about 40 years.

Principally since the great war, scholars in many disciplines have occupied themselves with mankind's gone-wild proliferation and with associated effects on habitats and living standards in all parts of the biosphere (see Buechner 1970; Brown, McGrath, and Stokes 1976). The published record of their studies would fill a large library. There is no dearth of information

on which to base a prudent course of resource use and management. "Prudent" implies that for any natural region we should seek a level of human numbers that can be supported, at a living standard that can be maintained, without degradation of the environment. Quantitative drafts on the resource base must be subject to calculated limitation (see Cook 1980). Qualitative improvements in the well-being of people are potentially unlimited, being dependent on social innovation and scientific progress.

This is the steady state economy sought by Daly (1980, p. 21). Pertinent to its ethical implications, he said it...

...would make fewer demands on our environmental resources but much greater demands on moral resources. In the past, a good case could be made that leaning too heavily on scarce moral resources, rather than relying on abundant self-interest, was the road to serfdom. But in an age of rockets, hydrogen bombs, cybernetics, and genetic control, there is simply no substitute for moral resources and no alternative to relying on them, whether they prove sufficient or not.

What the long-term carrying capacity of the global environment is likely to be defies calculation because the numbers-to-be for some variables are unknown. In the 60s I knew of three independent estimates of optimum population based on conditions at that time, one of which was published (Hulett 1970). All three were the same, about a billion people.

Which proves nothing, but any careful look at Earth scenery in the 80s will witness that we have lived beyond our means. Brown and Wolf (1987, p. 196) summarized

critical environmental problems that were detailed in the first four "State of the World" (annual) reports and other papers of the Worldwatch Institute:

Deforestation, soil erosion, acidification, and desertification are undermining economic progress in scores of countries. Efforts to devise sustainable development policies will be further complicated by the global warming induced by greenhouse gases, the depletion of the ozone layer, and the wholesale loss of biological diversity associated with tropical deforestation. These new threats to progress confront industrial and developing countries alike. Future improvements in living standards rest more heavily than ever on international cooperation. And time has suddenly become one of the scarcest of all resources.

Overuse of the environment, regardless of what else happens, will inevitably reduce human numbers, but this is the hard way. It would be less unsightly to reduce birth rates. In the industrial nations, fertility rates are declining, and theoretically this would happen in less-developed countries if living standards could be raised to desirable levels. But the time factor looms as lands and waters deteriorate. In 1987 some 87 million were added to world population—a figure that increases annually. At least a billion people are in dire poverty; many countries do not have resources to support a large-scale industrial economy. Rolling back the tide of human increase and filling the sump of destitution with massive subsidies is a time-worn dream beyond fulfillment. It is a well established principle that technology does not outrun population (Ehrlich and Holdren 1969).

On the other hand, technical assistance in population control is possible and now in world-wide demand.* The United States has been a leader in international efforts of this kind. Unfortunately, a change of policy was announced at the World Population Congress in 1984 (Bull 1984, Willson 1984). This country would no longer contribute to organizations or to national programs that include abortion as part of their family planning activities. A set of mind against birth control or even recognition of the population issue now appears to dominate administration programs.

Nowhere is this better illustrated than in a summer 1987 issue of *USAID Highlights*, which detailed "The President's initiative to end hunger in Africa."

A great region south of the Sahara, comprising 46 large and small nations is ecologically debauched by land degradation, drought, declining productivity, and famine (see Brown and Wolf 1985; Goliber 1985). Ruinous overpopulation results from the highest birth rates in the world, the average national doubling time being 23 years.

The latter fact was included in the caption of a map; but otherwise, in nearly four pages of text, the AID bulletin did not mention population. The President's "initiative" recognizes poverty as the "root cause" of hunger. The rescue mission consists of food shipments (amounting to \$300 million in 1987), converting all U.S. development

assistance (loans?) to grants, and assembling a *Development Fund for Africa*. This fund is a gift of half a billion dollars. It is intended to cure all difficulties by stimulating economic growth.

The bulletin and the program it describes involve the speciously positive ethic of feeding the hungry (see Prescott 1969). But sins of omission in the failure to address Africa's basic problem, and the half truth that supposedly informs the taxpayer are a blatant ploy in negative ethics. What it all means to Africa will be revealed in an imminent tomorrow.



It has become a life-science platitude to say that man is the only product of organic evolution that can plan for its own future. Of course, the intelligence that should guide such altruism also makes possible the endless array of instruments by which we dismember and utilize our endowment of natural riches. For the convenience of anthropologists, the going concept postulates that culture is the big difference (from other animals) that makes us human. More restrictively, culture is referred to as technology. In common with population, technology has run amuck as a determinant of habitat quality. Worldwide, it serves the almost universal obsession with economic growth (see Reilly 1973; U.S. Congress 1973) and helps to bring about the ever-more-rapid using-up of the resource base.

"Using-up" includes the failure to renew renewable resources. Such renewal depends almost entirely on biological understanding and the management of living things. The extraction of benefits from non-

* The recent breaking of complacency about population growth in third-world countries can be explained in large part to widespread use of publications of the Worldwatch Institute.

renewable assets, such as minerals, brings about depletion through the process of entropy (see Georgescu-Roegen 1980; Tamanoi, Tsuchida, and Murota 1984). Actually, entropy applies to everything we use. It is the dissipation of materials from their energy-concentrated form into heat and a wide assortment of non-usable waste. The products and waste products (plus radiated heat) are equal to what we started with. They include pollution wonders that are new to the universe and quite invulnerable to breakdown by the biochemical processes of nature.

This conceptual abbreviation suggests how a self-propagating industrial metabolism is overspreading and infusing land, water, and atmosphere with accumulating trash and potentially devastating pollutants. We are not only over-using the usables, we are over-producing the wrong products.

In view of what little we know and the awesome vastness of what we do not know, human beings have a legitimate right to uncertainties. Problems and programs in resource use involve a welter of technical complexities, political and economic pragmatism, and—so help us—ethical considerations.

The ethical questions have had substantial attention by social scientists (see Shrader-Frechette 1981). Frequently at issue is an idea that is obviously polarized in public attitudes: Do present inhabitants of the biosphere—people facing a sufficiency of problems—actually have a prior right to everything they can use of what the Earth provides (Blackstone 1981)? After all, why should they forego benefits so that the somewhat-mythical generations yet

to appear can enjoy them? I think some pertinent logic in this conundrum has had inadequate consideration.

We, the proprietors of today, are ancestors, and therein we aspire to a respectable record. But likewise, we are posterity, and the environmental vexations we face betoken an excessive pursuit of happiness and comfort by forebears who delayed too long in arguments about population, who got there first in cutting the big timber, and who did not care where they buried the toxic garbage.

We are perpetuating these traditions, and perhaps by now we should know better. In our time, we face tribulations tied to the increasingly visible unity of the biosphere. Not only are we victims of our own foolishness, we share the discomforts earned by people across the border.

To select what could qualify as a most-ominous example, we teeter on the edge of understanding the dismal prospect of global climatic change. Documentation of the phenomenon can be found on nearly any news stand. An issue of *TIME* (19 October 1987) explores atmospheric warming, acid rain, and the antarctic hole in the ozone layer.

Of course, this is a charge against our science and industry; byproducts, foreseen and unforeseen, have vitiated the atmosphere (Barton 1987). A lot of questions remain to be answered, and it will take time. If our luck ran out, the result would not be trivial. It could erase the ozone shield that protects all life from malignant radiation. It could melt polar ice and put someone's fishing fleet over the grand banks of Manhattan. Unfor-

tunately, taking precautions is not for free. It lacks a quorum among beneficiaries of the status quo (Crawford 1987). So is this something we have seen before? How long do we stand aloof and require more information?

It is another perspective that we *once had* a clean and productive environment, and it is still not so bad as it will be. Does someone have a right to destroy our estate? Can we demand that it be kept from getting worse, or even be restored? The question is not one of self-denial, of whether to use or not to use. Certainly we have to live. The overwhelming issue is whether we have an obligation of frugality and good management—whether we have the privilege of overdraft on resource capital that could go on yielding if we handle it right (Allen 1975). In times immediately ahead, we will devise an inheritance to people even more numerous than we are—a situation of our creating. Do we take refuge in uncertainty and pretend not to know the facts?

All of which describes an ethical problem. One way or another, it will have an ethical answer.



It seems an inevitable conclusion that environmental and economic policy-making in the government is vitally compromised by the claims of individuals. If ethics have a functional role in American life, they must be sought elsewhere in society.

Most would agree that religious teachings usually are, and should be, oriented toward ethical principles. Presumably they purvey the wholesome ideas of frugality, pro-

vision for the future, and service to other human beings. Yet, while exceptions exist, the clergy have been notably infirm in promulgating conservative use of the Earth's endowment of original wealth and natural spaces. This despite scriptural admonitions about sins of the fathers and the obligations of good stewards. Considering the abundant material available, we hear relatively little about sharing with those who must manage the citadel of man after all of us are gone.

In matters of religion many of the faithful seem relatively uncritical of infidelity to trust among those who interpret their beliefs. Recent travail in the conduct of TV evangelism suggests a diversion of church income to unofficial uses. In fact, on a basis of public representations, any habitual pessimist would conclude that things have gone amiss on a large scale. Despite such indications—a source of dismay to many—it is evident that some of the loyal followers and contributors in the program have been willing to go on following and contributing.

All the world knows that Pope John Paul II is the most traveled pontiff in history. A recent editorial in *TIME* states that he has left the Vatican on 36 visits to nations of the world. Often these trips have been to third-world countries where birth rates are far in excess of death rates, where overpopulated millions struggle for subsistence amid a catastrophe of eroding soils, devastated forests, and polluted waters. In such areas the urgency of population reduction, to levels where people can live in decency on lands available, should be evident to any discerning observer (Prescott 1969a). These situa-

tions, which are tragically plentiful in the tropics, would seem to present matchless opportunities for religious counseling. Yet no word escapes His Holiness in recognition of the foremost temporal plague of mankind (see Sax 1969).

In these times of confusion, public belief in nearly anything can be perturbed by high-fashion dissent. Recently the literature on human numbers and resource economics has been enriched by the appearance of several books, numerous articles, and a spate of reviews that have the charm of unconventional wisdom. They have had courteous treatment in the popular and scientific press. The germinal idea is that resource scarcities are a myth, overpopulation a doomsday fabrication. In reality, we are to believe, two people can occupy the same space at the same time. If true, of course, this would be a crippling amendment to the first law of thermodynamics, which says, in paraphrase, that you can't get something for nothing.

As a working policy, the revised theory of planetary logistics vindicates unlimited human reproduction (people "create" resources), the *ad libitum* consumption of infinitely replaceable natural wealth, and faith in the capacity of technology to cope with any shortages of the future.

All of which is good news to believers in an endlessly expanding economy. It justifies liberties taken on public lands; it comforts anyone with reasons to prolong, for yet a while, excesses of extractive industry. For those who live by political advantage, and for the impatient ones who weary of conservation preachings, this second coming of

old assumptions in resource fundamentalism is a welcome respite. Lay persons of uncertain persuasion are baffled by the failure of experts to agree.

I repeat from Daly (1980) a quote from the Prophet Isaiah: "They know not, nor do they discern; for he has shut their eyes so that they cannot see, and their minds are closed so that they cannot understand."

As an ecological concept, most people of the Earth have ultimate significance (like the creatures of nature) as consumers. They cannot act for themselves in great strategies for survival. It is a necessary, and therefore ethical, function of leadership to probe the maze of human relationships and to craft a durable design for husbandry of the biosphere.

For individuals involved, this is a daunting assignment. But if it is to succeed, then whatever may be necessary in one's personal adaptation of practice or doctrine must have precedence as a social imperative. If failure is unthinkable, then ignorance, cynicism, and dogma are not acceptable terms of reference.



These appraisals of habit-forming practices in government and society are only marginally inspirational. They suggest that where political factions and their specialized requirements are involved, it is fruitless to look for a governing ethic.

Yet it is evident that someone who cares has been on the job. Many of the great disasters did not come off, despite excruciating efforts by committed sponsors. It is ultimate truth that things could be

worse than they are. That national debt could be \$4 trillion; we could be building a Grand Coulee on the Yukon; the trumpeter swan could be dead and gone.

Bessed are those we have to thank; who are they? I think I know.

As a policy guide for now and as the environmental cause of the future, the conservation movement has no respectable competition. Yet it is manned by only a minor cadre of world leadership. It has a devoted technical staff, a board of informed directors, and a body of discerning stockholders. The conservation purview is as long as the future and as wide as the biosphere. Its compelling urge is the knowledge that this man-species, like other things that move, can survive and prosper only in a productive habitat; which means membership in an association of compatible plants and animals (see Soulé 1985).

Conservationists look upon themselves—and curse the fate of the fellow down the block. They know about one-worldism, and that poverty is catching. They know good living is impossible where mass-begotten swarms of people must compete for a pittance on degraded lands. They would turn this around. They will settle for respectability and fewer people.

About half a century ago, mainly in North America, an advance guard of eager trainees were matriculating in a relatively new school of thought. Some found specialties within such fields as forestry, soil science, wildlife biology, and range management. Some were bemused with the complexities of self-perpetuating ecosystems. In degree all

were ecologists, since anything they studied turned out to be a part of something else. They found that management is most successful in garnering useful crops from lands, waters, vegetation, and animal life when it is based on scientific knowledge and natural relationships.

Life scientists and their professional allies quickly bought the idea of conservation. It gave direction to what they were doing. They learned that knowing how to do something was not enough. There is a policy level: you have to know when and where to do it and why it is necessary in the first place. Biologists discovered that what they learned usually applied in some way to the ecology of man; which included the maintenance of his habitat; which meant survival—an ultimate purpose. Developments in the real world witnessed that essential human services included defense of the Earth's irreplaceable life communities and natural systems (see Ehrlich 1987). These too were people habitat. They would be needed. They belonged in the resource base, which belonged to everyone.

Biological generalists and specialists, and workers in cognate disciplines found employment in federal bureaus and the agencies of states. They provided the knowledge of fundamentals in theory and practice that was necessary for sound public programs. Often professionals have a keen sense of right and wrong. When they go wrong, it usually is because someone imposed a political dimension onto what they are doing. They become the victims of miscarried justice. I was among these pros for 20 years and saw it happen; their morale goes

bottom-up. Some of the "bureaucrats" I knew were among the most conscientious and ethically straight laced individuals I have met.

Today, many of these trained people—including lawyers, economists, and social scientists—are on the staffs of citizen organizations, where they provide technical information and guidance. We now have a proliferation of federations, associations, institutes, leagues, and societies devoted to resource conservation or one of its many components. Commonly these groups are the moving spirit behind wise and provident accomplishments by Congress. In this function they work among the electorate and generate pressures for constructive statecraft. The big organizations have magazines, bulletins, and newsletters purveying current facts, alarms, and notices. A few own lands and waters (see Goodwin 1968) dedicated to wilderness and wildlife preservation (e.g., The Nature Conservancy and National Audubon Society). The largest of the wildlife organizations, the National Wildlife Federation, has affiliates in every state, 500 employees, and an annual budget of \$50 million.

I confide that these national, state, and local groups, with their sound objectives, able staffs, and loyal memberships, are the most important custodians of a bona fide ethic of the future.



Both scientifically and philosophically, the conservation organizations have assumed a special kind of leadership. A few have had a century of experience under the same name or nearly so; others have undergone a series of slightly changing incarnations. They sponsor

annual meetings and ad hoc conferences. They work together in exemplary fellowship, and they compete for the memberships, grants, and contributions that keep them alive.

The organizations have a publication record of inestimable value. In function and content many of their periodicals overlap and extend the fields of state conservation magazines. A few of the slick-paper color-illustrated organs are among the outstanding outdoor magazines in the world. The published proceedings of meetings provide an outlet for papers covering every kind of interest. The Wildlife Management Institute will soon distribute their 53rd volume of the transactions of the North American Wildlife and Natural Resources Conference—over the years, the largest and most important meeting of its kind. The various institutes and societies have supported research and published books on endangered species, public lands, systems of management, and other subjects of interest. In this bare outline I am keenly aware that mentioning a few does injustice to the many.

In recent years, coalitions of organizations have been effective in pursuing their common missions. A "Leadership Conference on Population, Resources and the Environment"—stimulated primarily by the National Audubon Society (1981) and the Population Crisis Committee—brought together representatives of some 60 national groups in January 1981. Their summary statement called upon the Congress to formulate a national population policy and to create in the executive office of the Presi-

dent "an oversight capability to assess the interrelated problems of population growth, resource depletion and environmental degradation" (see Mann 1980). The conference was an important move in publicizing the unanimity of its participants in a societal cause. Enthusiasm generated at this meeting led to formation of the Global Tomorrow Coalition, who elected a board of directors, established a national office, and began publication of a quarterly, *Interaction* (see Peterson 1981).

In June 1983, the coalition called another meeting. It was a follow-up on the appearance in July 1980 (Barney et al.) of a major environmental assessment, the 3-volume "Global 2000 report to the President." In 1977 President Carter had assigned this study to the Council on Environmental Quality and the Department of State. The massive report, the work of a competent staff and many professional contributors, identified world-wide population and resource problems that would be critical by the end of the century. Significantly, the letter of transmittal stated that "...to meet the challenges described in the Global 2000 Study our federal government requires a much stronger capability to project and analyze long-term trends" (see also Speth and Muskie 1981).

The program of the Global Tomorrow Coalition Conference told of its purpose:

Almost three years have elapsed since publication of the Global 2000 Report. In that time there has been no substantial change or any major new policy initiative on the part of the United States Government that would

enable us to act in a more informed way...

The two days of discussions and workshops ended with a long roster of recommendations, many of which had been made before.

The early 80s were a time of growing international activity in environmental affairs, much of it coordinated by the International Union for the Conservation of Nature and Natural Resources.

IUCN has prepared a World Conservation Strategy designed to establish a common policy framework to maintain natural life support systems, preserve genetic diversity, advance managerial and legislative programs, train personnel, advance research and expand education and public participation. (Robinson 1981)

In January 1980 a committee of world leaders chaired by former German Chancellor Willy Brandt reported on a three-year study of world problems, concluding that

The strain on the global environment derives mainly from the growth of the industrial economies, but also from that of the world's population. It threatens the survival and development opportunities of future generations. (ibid.)

An international meeting sponsored by the newly formed World Resources Institute was held at Wye, Maryland, in May 1984. In addition to 75 resource professionals, it included representatives from 20 other countries. "...the conference produced an unusually broad assessment of global-scale resource, population, and environmental problems and the policy shifts and initiatives needed to address them." By way of proceedings, the institute published the many pap-

ers in a volume, "The global possible" (Repetto et al. 1985).

Beginning in 1981, the chief executives of 10 of the major conservation organizations began to hold informal meetings to discuss their programs of environmental protection. After two years of such communication, they undertook the development of "An environmental agenda for the future" (Cahn 1985). This publication, which has had wide distribution, might well be a congressional handbook. It synthesizes and makes recommendations in such environment-related areas as population, water resources, pollution control, wildlife, public lands, urban environments, and international needs and programs.

Organizational activities of the past decade have featured public education—teaching materials, TV shows, and weighty publications. Mention must be made of the three annual volumes (1985-87) of the Audubon Wildlife Report, a highly informative compilation on species, agencies, and problems for which much credit must go to Amos S. Eno, who originated and directed the project.

In world perspective, the most influential publications yet to appear are those of the Worldwatch Institute under the leadership of President Lester R. Brown. In part, this includes a series of authoritative bulletins, now numbering 81 (about 60 pages each), in the broad field of resources, environment, and allied social and economic affairs. An annual "State of the world" report is produced, which has had unprecedented global acceptance. The fourth of these reports (Brown et al. 1987), available in most of the world's major languages, will

have a distribution of more than 200,000 copies. When this publication effort began, it received primary support from the Rockefeller Brothers Fund, but it is now self-supporting—obviously a result of its great usefulness and demand among nations of the world.

This incomplete briefing on conservation and environmental activities signalizes the possibility of more and faster ideological progress. However, although efforts have been made in Congress, we still have no population policy and no agency to monitor legislation and programs for their future effects (foresight capability). Considering the conceptual upheaval that overtook the Washington scene in 1981, constructive innovations probably were too much to expect. Among people who should know, there is now an outlook that the situation should be improving (Frampton 1987).



In this year of the Constitution, we may reflect appropriately that some of the hard-working founders had misgivings about the adequacy of their product (see Burger 1987). The aging but perceptive Franklin was one of these.

Since enactment of the Bill of Rights (ten of them, 1791), the Constitution has been amended 16 times, and our great concern has been with individual privileges and freedoms. Although they venerate a noble achievement, Americans are awakening again to a realization that the job is unfinished. The societal exponentials of complexity, competition, and stress have vastly changed the lives of people now living. Deterioration of the environmental inheritance will

be a burden for generations to come. Our freedom to pre-empt anything movable and to throw garbage over the back fence has been too much of a good thing.

In this country an idea has grown that that we could improve our chances for continuing security by another amendment to the Constitution. Deeply entrenched in their inherited mores, many Americans do indeed harbor a feeling of frugal self respect, an ethic of self examination, a readiness to say enough is enough, a commitment to the principle of pay as you go. This feeling could gain strength by public exposure. It could be a more effective protection against habitat neglect and exploitive abuses if it were part of our legal foundation. If the right of a citizen to a pleasant and productive environment were constitutionally recognized, it would give notice to the overly ambitious that public properties are not up for grabs. It would establish in our government a compelling charge that these ramparts we watch are to be defended, even at the cost of political gain.

At the 51st annual meeting of the National Wildlife Federation, President Jay D. Hair described an action by "the celebrants of the Constitution's bicentennial."

...I am proud that the delegates to this annual meeting acted upon and unanimously endorsed an Environmental Quality Amendment. That, of course is only the first step. It will take long hours and dedicated work by volunteers across our great Nation to persuade two-thirds of both Houses of Congress and three-quarters of the states to ratify a Constitutional amendment.

The gist of the action by the delegates was that the Constitution be amended by an environmental Bill of Rights. It would establish the principle that

The people have a right to clean air, pure water, productive soils, and to the conservation of the natural, scenic, historic, recreational, esthetic and economic values of the environment. America's natural resources are the common property of all the people. As trustee of these resources, the United States Government shall conserve and maintain them for the benefit of all people...

Wisely, the resolution did not attempt a final wording. That is a job for legislative scribes.

This is a positive move to improve the legal footings of the congressional mission. It could fortify our representatives in resisting pressures to do the wrong thing. It would clarify policy and render unnecessary much of the controversy and rear-guard actions in which private citizens now invest their efforts.

We have leaned too hard on an undefined sense of social morality to insure our future, although it is unlikely that we ever could afford to be without it.

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