

Preserving Endangered Species: Why Should We Care?

To make its research readily available to a broad audience, the Center for Philosophy and Public Policy publishes a quarterly newsletter: *QQ—Report from the Center for Philosophy and Public Policy*. Named after the abbreviation for “questions,” *QQ* summarizes and supplements Center books and working papers and features other selected work on public policy questions. Articles in *QQ* are intended to advance philosophically informed debate on current policy choices; the views presented are not necessarily those of the Center or its sponsors.

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When construction of the Tellico dam was temporarily halted because the project posed a threat to the endangered Tennessee snail darter, environmentalists were triumphant, economists relieved (the dam was an economic disaster in its own right). The general public seemed cheered by the triumph of such an improbable underdog, but uncertain that a lowly three-inch minnow was really worth the trouble of saving.

Surveys taken by Stephen Kellert of Yale University reflect this ambivalence in public attitudes toward species preservation. In a questionnaire modeled on the Tellico dam controversy, pitting an obscure fish species against various development projects, the fish species won out handily over recreational projects, tied with projects to divert water for industrial development, but was soundly defeated by projects to produce hydroelectric, agricultural, or drinking water improvements. As codified in the law of the land, the will of the people is expressed more strongly in favor of species preservation. The Endangered Species Act mandates stringent standards for protecting any plant or animal species that has been listed as threatened or endangered. However, the list of protected species is a short one, so the effect of the Act is considerably weakened.

How much *should* we care about endangered species? Why, indeed, should we care at all? A first answer is that extinction is forever. It is irrevocable, the flung stone that cannot be called back. Still, we do irrevocable things all the time, sometimes half a dozen before breakfast. But our knowledge of the considerable

benefits the human species has reaped from other species, together with our ignorance of what benefits we might someday glean from species currently threatened, make extinction particularly alarming. What if the *Penicillium* mold had gone extinct a century ago? Who knows what cure for cancer we would have discovered even a decade hence in some unknown species that went extinct yesterday? Thomas Lovejoy, Executive Vice President of the World Wildlife Fund, concludes, "Assuming that the biota contains ten million species, they then represent ten million successful sets of solutions to a series of biological problems, any one of which could be immensely valuable to us in a number of ways."

"If we literally do not know what consequences the extinction of this or that species may bring, then we should take seriously the possibility that extinction may be beneficial as well as the possibility that it may be deleterious."

But this argument cannot bear a great deal of weight. It sounds too much like the reasoning of our old Aunt Tillie, who saves every bit of string or bottle cap on the off chance that it may someday come in useful. Clutter mounts up exponentially, and someday never comes. After all, philosopher Elliott Sober observes, "there are so many species. How many geese that lay golden eggs are there apt to be in that number?" For Sober, an argument from ignorance is no argument at all: "If we literally do not know what consequences the extinction of this or that species may bring, then we should take seriously the possibility that extinction may be beneficial as well as the possibility that it may be deleterious. . . . Ignorance on a scale like this cannot provide the basis for any rational action."

If we can't appeal to the possible future usefulness of species, what reasons do we have for preserving them? Put bluntly, what's it to us whether they live or die? But perhaps there are benefits to preserving species that Aunt Tillie overlooked. Do species have a value in their own right, independent of what value we place on them? Or can we, even within a human framework, find a non-commercial, non-scientific value to justify their preservation?

As Goes the Furbish Lousewort . . .

Let us concede that only relatively few species are likely to prove of direct commercial or scientific use. Does this mean that the rest are therefore useless—expendable in the face of competing resource needs? That conclusion would surely be a hasty one, given the sheer magnitude of the number of extinctions currently threatened. Extinctions that might not be worrisome

viewed one by one take on a new seriousness when multiplied many thousandfold.

Lovejoy reports that hundreds of thousands to over a million extinctions are projected to take place by the end of the century. The estimates vary widely (nobody even knows how many species there are, let alone how many are endangered), but "what is important," on Lovejoy's view, "is that every effort to estimate extinction rates has produced a *large* number."

Of course, almost every species that has ever lived has gone extinct, so extinction itself is natural, normal, routine. Even extinctions caused by human practices such as hunting and habitat fragmentation cannot be called unnatural: man is part of nature, too, as much as any other predator. But man is a predator of matchless efficiency, and while all creatures in one way or another transform their environments, man is currently transforming his on an unprecedented scale. The current rate of extinctions is extraordinary and exceeds the rate at which new species are evolving. This means that the planet is in the throes of a process of biotic impoverishment.

How alarming is this? What will we lose in losing biological diversity? Lovejoy points out that "natural aggregations of species (ecosystems) are more than a large collection of genetic material; they also are involved in ecological processes, often of immediate public service value." These include watershed protection and moderation of climatic, hydrological, and nutrient cycles. With diminished diversity comes loss of clean and reliable water supplies and of soil fertility. Biological impoverishment weakens nature's regenerative power to resist human exploitation.

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Lovejoy recognizes that "in any immediate sense it is hard to see how the loss of a single species will affect the day to day life of the average citizen who will probably not even know of the loss or that the species ever existed. Yet, when an ecosystem has been altered to the point that a public service benefit such as watershed protection is affected, it is not only quite obvious, but also, biological diversity will have by then suffered a significant reduction."

Lovejoy argues, in fact, that biological impoverishment may be directly responsible for human impoverishment. It is no accident, he suggests, that "those nations which are unsuccessful in maintaining their basic diversity of plant and animal life are also the ones least successful in protecting decent standards of living for their people." He blames heedless environ-



Drawing by W.B. Park, © 1984
The New Yorker Magazine, Inc.

*"I certainly am worried about the whales. It's just that I'm
not worried about them right this minute."*

mental policies in part for the fact that Haiti, the poorest nation in the Western Hemisphere, is in far more dire economic straits than its neighbor, the Dominican Republic, which has undertaken active initiatives to protect wildlife habitat.

Bryan Norton, a philosopher currently with Resources for the Future, takes Lovejoy's argument to show that the preservationist doesn't need to document a specific present or anticipated commercial use for an individual species in order to justify saving it. Since "natural diversity, in and of itself, has utilitarian value," each and every species, as a unit of diversity, has *prima facie* utilitarian value as well. Rather than isolating a particular species and examining it for direct commercial or scientific potential, Norton views each species as a unit of diversity and looks at the total value we derive from living in a diverse world.

Granted, each species is only one very tiny unit of the world's overall diversity, so perhaps Norton's argument leads in the end to our realizing that no one species matters very much. Speculations that the loss of any one species could trigger a chain reaction leading to some kind of environmental catastrophe are usually dismissed as fanciful. But if Lovejoy's and Norton's arguments do not support a heroic effort to preserve every individual threatened species, they provide a strong reason to preserve biological diversity generally, to protect the integrity of the natural world.

The objection can be raised, however, that the reasons given so far for preservation are the wrong kind

of reasons. We are doing what we can for other species because of what other species can do for us. We are taking a broader view of the benefits they provide, and a longer-term view, but still a view from the same vantage point, of human needs and interests. Species here are still *commodities*.

Intrinsic Value

Many environmentalists argue that species should be preserved, not for our sakes, but for their own. They claim that species have intrinsic, not merely instrumental, value. They are valuable, not merely in virtue of what else they are good *for*, but because they are good in *themselves*.

While these claims have considerable rhetorical force—compared, say, to discussions of the role of species in tertiary waste treatment—they raise more questions than they answer. *Why* do we think species have intrinsic value? In what is it grounded? What is it about species that makes them valuable?

One way to address these questions is to look at a case where the answers are clearer. We can disagree about whether species as such have intrinsic value, but nobody doubts that individual human beings are intrinsically valuable, if anything is. So what is it about human beings that grounds their value? Are species valuable in the same way?

If human beings are intrinsically valuable because we can *think*, then no helpful parallel between humans and

other creatures can be drawn. Rationality seems an attribute exclusively human. But if we count morally because we can *feel*, because we can experience pleasure and pain, then a case can be made that other sentient creatures count, too. This is the rationale behind the animal liberation movement. Plants do not suffer, however, nor do lower life forms, and so the argument cannot be generalized to include them in its sweep.

A thornier problem is that no argument modeled on the intrinsic value of individual human beings can justify attributions of intrinsic value to whole groups—that is, to species, whether human or otherwise. Sober explains, “What is special about environmentalism is that it values the preservation of species, communities, or ecosystems, rather than the individual organisms of which they are composed. ‘Animal liberationists’ have urged that we should take the suffering of sentient animals into account in ethical deliberation. . . . But trees, mountains, and salt marshes do not suffer. They do not experience pleasure and pain, because, evidently, they do not have experiences at all. The same is true of species.”

A more promising approach may be to say that ethical status derives not from having feelings or experiences, but from having needs or interests. A plant needs water, sunlight, and air, even if it doesn’t consciously suffer from their deprivation. Likewise, we can say that a species needs to have its habitat protected, even if there is no conscious entity that entertains such a want. Do “needs” of this sort have to be taken into account morally?

The problem, Sober points out, is that on this view

Photo by Luther C. Goldman, U.S. Fish and Wildlife Service



Bald eagle

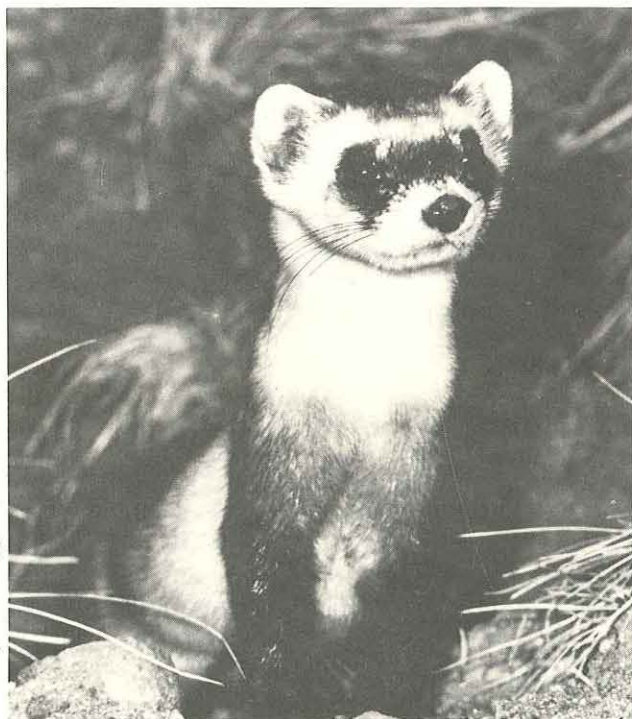
of needs and interests there is almost nothing that *doesn't* have moral standing. “If one does not require of an object that it have a mind for it to have wants or needs, what *is* required for the possession of these ethically relevant properties? Suppose one says that an object needs something if it will cease to exist if it does not get it. Then species . . . have needs, but only in the sense that automobiles, garbage dumps, and buildings do too. If everything has needs, the advice to take needs into account in ethical deliberation is empty.” It is no help to the environmentalist if species turn out to be intrinsically valuable only in some sense in which just about *everything* is. We want a specific reason to value and preserve species, to hold their claims as counting for more than the claims—if any—of factories and junkyards.

It is more difficult than it might seem, then, to come up with a reason for granting intrinsic value to species that does not either piggy-back illicitly on assignments of value to individuals or hand out attributions of value too indiscriminately. It looks as if the value of species is not intrinsic, but somehow dependent on the role species play in human lives and awareness.

Transformative Value

If the value species have depends on the value they have *for us*, does this make them into commodities for human use, like so many widgets? There are at least two reasons why we might be reluctant to draw this conclusion. There is, first of all, something that makes us want to put species of living organisms in a class

Photo by Dean Biggins, U.S. Fish and Wildlife Service



Black-footed ferret

apart from other resources, even resources that serve basic human needs. We debate whether species have intrinsic value, but no one argues for the intrinsic value of, say, tractors or ball bearings. Second, if the value of other species rests only on their ability to fulfill human desires, this seems to give them no secure claim *against* human desires. But it is the voracious desires fueled by human civilization that endanger species in the first place.

If the value of other species rests only on their ability to fulfill human desires, this seems to give them no secure claim against human desires. But it is the voracious desires fueled by human civilization that endanger species in the first place.

Sober responds to the first of these worries by drawing an analogy between objects in nature and works of art. The two have important similarities. "For both natural objects and works of art," he maintains, "our values extend beyond the concerns we have for experiencing pleasure. . . . When we experience works of art, often what we value is not just the kind of experiences we have, but, in addition, the connections we usually have with certain real objects." We value the existence of Michaelangelo's *Pieta*, beyond any value we derive from just seeing what it looks like. We value the process by which it was created, its history, its authenticity. The same is true, he suggests, of objects in nature.

Yet we are willing to concede that artistic masterpieces are not valuable in themselves, completely apart from any human consciousness of them: "What is valuable [in a work of art] is the relation of a valuer to a valued object. . . . when valuers disappear, so does the possibility of aesthetic value." That art objects—and natural objects—are not intrinsically valuable does not mean that their value is not of a very special kind.

Norton characterizes this deeper element of value in nature and art by saying that both not only fulfill human desires but also transform them. Whereas commodities satisfy human preferences as given, experiences of works of art and study of the natural world lead us to question our values, to criticize and reform them, to alter them altogether. Where environmentalists have gone wrong, he feels, is in accepting a dilemma between either giving free rein to human wants and desires, in their present materialistic form (endangering vast tracts of wild habitat in the process), or else insisting that other creatures, other species, and the ecosystems they inhabit must have some value independent of human wants and desires altogether. But the dilemma is a false one, because "it unnecessarily contracts the range of human values to those founded on demands for given preferences. . . . This is to ig-

nore the role of other species and varied ecosystems in forming and transforming our values."

According to Norton, wild species and undisturbed ecosystems provide occasions for experiences that allow us to rethink our place in the natural order. We learn from other species about the forms and limits of survival on a fragile planet; we learn about sharing the destinies of our fellows in the biotic community. "Appeals to the transformative value of wild species and undisturbed ecosystems thereby provide the means to criticize and limit human demands that threaten to destroy those species and ecosystems while at the same time introducing an important value that humans should place on them."

Conclusion

Where does this leave the snail darter and the fur-bish lousewort, the whole host of lowly species that we may never encounter in our lifetime and wouldn't recognize if we did? How do these enlighten and uplift us? What transformative value do they possess? The answer, in the end, may be: not very much. They doubtless have some role in maintaining the natural order that we do not understand; and the handful of scientists who do know and study them may take aesthetic pleasure in doing so. Is this enough to save them? At what cost?

To examine species one by one is always to miss the value—commercial, scientific, aesthetic, transformative—in their interaction, in the whole interlocking system of nature in which human beings play only one small part.

Norton's conclusion is that this may be the wrong question to ask. To examine species one by one is always to miss the value—commercial, scientific, aesthetic, transformative—in their interaction, in the whole interlocking system of nature in which human beings play only one small part. The lesson of the environmental movement is that nature is not best understood and protected piecemeal. To focus on each individual scrap of creation may distract us from the magnificence—and vulnerability—of the whole. It is nature itself, in all its diversity, that uplifts and sustains us. This is what we are bound to preserve.

The views of Stephen Kellert, Thomas Lovejoy, and Elliott Sober are quoted from their essays in *The Preservation of Species*, edited by Bryan G. Norton (Princeton University Press, 1985). Bryan G. Norton's views are quoted from his chapter in *The Preservation of Species* and from his forthcoming book, *The Spice of Life: Why Preserve Natural Variety?* Both books are products of a multi-year project on endangered species, led by Bryan Norton at the Center for Philosophy and Public Policy and funded by a grant from the National Science Foundation and the National Endowment for the Humanities. To order *The Preservation of Species*, see page 15.

AIDS: What to Do—And What Not to Do

Of those dead and dying from AIDS three-quarters are gay men. Thousands have been felled by the disease. As things stand, government funding for patient care is virtually non-existent and preventive funding has risen significantly only as AIDS has come to be perceived as a threat to the dominant, non-gay culture. What should the government be doing—and not doing—to meet the mounting crisis?

What Not to Do: Quarantine

The aim of preventing harm to potential innocent victims is largely non-controversial. The defense of individuals from substantial harm from others is on any account a chief warrant for governmental action, and for governmental coercion. But care must be taken in how that aim is realized.

Already state-mandated discrimination against groups at risk for AIDS has begun in employment and access to services—allegedly on medical grounds, but in pointed contradiction to judgments of the Department of Health and Human Services, the Centers for Disease Control, and the National Institutes of Health. This trend takes on alarming proportions when coupled with the recognition that prisons and quarantines are distinguishable neither in terms of the harms from which society would protect itself, nor in terms of the harms they inflict on “offenders.” As leper colonies have shown, it is silly to suppose that internment of the innocent does not stigmatize them.

The current hysteria about AIDS on the part of the general public, when not simply a manifestation of already existing anti-gay prejudices, is based on the presumption that the disease is spread indiscriminately. But the most important fact about AIDS for public policy purposes is not that it is deadly but that it, like hepatitis B, is caused by a blood-transmitted virus. What this means is that for the disease to spread, bodily fluids of someone with the virus must directly enter the bloodstream of another. And not just any bodily fluid will do. To effect contagion, a certain concentration of the virus is required in the fluid, and though the virus has been found in tears and saliva, it seems not to occur in them beyond the threshold concentration. Thus, in countries with reasonable sanitation, groups at risk for the disease are clearly circumscribed: 96 percent of cases have clearly demarcated modes of transmission and cause.

Admittedly, in countries without adequate sanitation blood-transmitted viruses are rampant. If a population

prone to cuts and abrasions bathes in the same water in which it bleeds and urinates, it will have blood-transmitted viruses dispersed widely through its membership. Perhaps a quarter of the Third World suffers from hepatitis B, which in the United States infects exactly the same groups that are at risk for AIDS and yet has never been a great cause of social or government concern.

The case for general indiscriminate contagion cannot be made out. In consequence government policy based on that fear—in particular quarantines of AIDS-exposed persons—is unwarranted.

What Not to Do: Paternalism

The mode of contagion for AIDS ensures that those who are at risk are those whose actions are a contributing factor to their risk of infection—chiefly through intimate sexual contact and shared hypodermic needles. (A small exception is newborns of infected mothers. For this set of cases social policy should be whatever it already is for cases of parents who pass fatal congenital disease to their children.) It is the general feature of self-exposure to contagion that makes direct government coercive efforts to abate the disease particularly inappropriate.

If independence—the ability to guide one’s life by one’s own lights to an extent compatible with a like ability on the part of others—is, as it is, a major value, one cannot consistently with that value prevent people from putting themselves at risk through voluntary associations. For mutual consent guarantees that the “compatible extent” proviso of the independence principle is satisfied. The important question then becomes whether AIDS warrants paternalistic protection of those not exposed through banning or highly regulating the means of possible transmission.

Paternalistic interference, on one justification, is warranted when a person is operating at risks which he is unable to assess due to diminished mental skills or lack of information. The solution tailored to such incapacities, though, is chiefly education. This line of argumentation at most justifies labeling dangerous products, in the way such labels are placed on cigarettes.

But far from justifying major paternalistic coercion of gay institutions, say, closing gay baths, this argument suggests that paternalistic arguments surrounding AIDS are not even being advanced in good faith. Five years into the AIDS crisis the federal government has

finally put out bids for *studies* of ways in which programs of AIDS education might be effected. And in Los Angeles and Philadelphia government sponsorship of private-sector distribution of safe-sex literature was withdrawn when the literature was branded as pornography: neo-feminists take note.

Another legitimate way of justifying paternalistic coercion is to argue that one should be protected from ceding away the very conditions that enable one to be an independent agent. One is not allowed to contract to become a slave. Do these grounds warrant state-imposed bars to putting oneself at risk for AIDS?

Sex, like health, is in general a central personal concern and addressing sex as central and appropriating it to oneself in some way or another is probably necessary to meaningful life.

Admittedly, minimally good health—indeed, life—is a necessary condition for being viewed seriously as an independent agent. So the AIDS case might seem relevantly similar to the contracting-to-slavery case. It differs, though, in two significant and separately decisive ways.

First, slavery *by definition* is a condition of lost independence. However, as with other venereal diseases, not every sexual encounter with a virus-exposed person exposes one to the virus and exposure is no guarantee of actually contracting AIDS since only some portion (estimates vary from 5 to 20 percent) of those exposed actually come down with the disease. Because the risk is high but not invariably catastrophic, putting oneself at risk for AIDS becomes less like contracting for slavery and more like being a race car driver or a mountain climber. In cases like these the considered standard of our society is that the assessment of risk ought to fall to the individual.

Second, in the slavery case we are unable to imagine what momentary gain could be reasonably balanced against the value to the individual of independence permanently lost. However, sex, like health, is in general a central personal concern and addressing sex as central and appropriating it to oneself in some way or another is probably necessary to meaningful life. Even the lives of priests and nuns who renounce it altogether would lead us to believe that one's sexual choices—including the choice of celibacy—are as central as any facet of one's life.

The centrality of sex to life means that it may have to be balanced with the value of continued independence—independence is not our only value or prior to all other values. Striking a balance surely is not a decision that the state could reasonably make across the boards for all. Individuals, not the state, must make the difficult choices where values centrally affecting the

self come in conflict. This principle is generally recognized when health and religious values come in conflict: the state ought not to force a lifesaving blood transfusion on a patient who believes it will eternally damn him.

Governments that have written off the value of gay sex altogether by making it illegal largely on religious or other grounds that do not appeal to the causing of harms to others should be viewed as especially suspect when they make paternalistic arguments on behalf of gays. For by this very course they have already shown that they do not respect gays as autonomous and independent beings.

What to Do: Preventive Funding

The centrality of sex to individual lives, though, points the way to a chief justification for state funding of preventive AIDS research. People ought not to be in the position where they have to make trade-offs between the central components of a complete life. Ending the conflict of central personal values will be especially attractive when the means to it place no nearly comparable burden on others. What is required in the case at hand is tax dollars for both basic immunological research and applied viral research. Yet, given the ends likely to be achieved and assuming an equitable tax system, taxation places no comparable burden on those taxed.

A second argument for preventive AIDS funding is that no one should have to live in a condition of terror. Imagine a prisoner who is not actually ever tortured but who daily witnesses the torture of others in adjacent cells. Not only the torture victims themselves but he too has experienced cruel and unusual punishment. Constantly expected but uncertain destruction seizes up the mind and turns it against itself, destroying the equanimity necessary for thinking, deciding, and acting.

Gays now live in . . . a condition of generalized terror. As the number of AIDS cases has risen exponentially, leaving nearly everyone with lost acquaintances, gays are experiencing—at a minimum—the equivalent of the V-2 bombings of London.

Gays now live in such a condition of generalized terror. As the number of AIDS cases has risen exponentially, leaving nearly everyone with lost acquaintances, gays are experiencing—at a minimum—the equivalent of the V-2 bombings of London. Quite independent of any view one may have on moral guilt or innocence in the spread or acquisition of AIDS (the prisoner in our example was, let's say, a murderer), no one deserves the terror that has filled the everyday reality of gays. Indeed, everyone exposed to terror has a positive claim that it be ended.

What to Do: Tending the Innocent

Though AIDS is contracted in a condition where one has put oneself at risk, the disease ought not to be viewed in general as a case of paying the piper, as one might claim suffering from a mountain climbing accident ought to be, where the effects of negligence to oneself are to be borne by oneself.

Consider, first, that the incubation period for the disease can be five years or longer. The disease first came to light anywhere in the United States only in mid-1981 when it was shrouded in mystery, its nature unknown. This means that even people who totally swore off sex on first hearing mention of the disease would still now be coming down with it.

Second, as mentioned, educational material that would make people aware of their risks has only recently begun to be discussed by governments. And the mass media have been more than a little chary to provide details of safe-sex practices. So many people have been taking risks in situations of constrained information. Even in conditions of complete information, furthermore, it turns out that most individuals are not very good at making judgments of risk management. That this is so makes a big difference in assigning fault to individuals.

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Nor is sex drive something over which one has an unrestrained control. One thing that seems likely to be confirmed by the AIDS crisis is that sexual orientation is not a matter of choice, or else every gay man cognizant of the health crisis would have attempted to switch orientations long ago. If orientation is fairly fixed, the only question becomes how much sex is okay. The Centers for Disease Control now recommend that gay men simply be celibate—unless they have lived in long-term completely monogamous relationships. This advice seems little rooted in an understanding of the cussedness of sexual and cultural reality. On the one hand, the recurring and intrusive nature of sexual desire guarantees that in general gay men, as others, will not be celibate. On the other, long-term gay relations have been a rarity, and necessity is a particularly poor forge for working the most delicate of human bonds. Those who espouse safe-sex guidelines also seem to bump up against reality. Safe-sex is poor sex—as likely to frustrate as satisfy.

As important, sex is virtually the only mode in which gays in our culture are allowed to identify themselves to themselves. And yet the gay person's sexual orientation is the chief facet of his existence, just as for blacks being black, due to cultural realities, is the chief facet

From *Hot Acts*, edited by Winston Leyland



Sunshine Press, © 1984

"When we get to the ark, don't tell them I'm gay."

of their existence. As the result something more than just pleasure and the fulfillment of need is wrapped up in sex for gays. Identity itself is at issue.

In light of these facts, it looks as though the chortling "we told you so" of some conservatives is, at the least, unjustified.

What to Do: Hospice Care

AIDS has no cure. Tendance for AIDS patients chiefly requires routine nursing and hospice care. Historically routine nursing and hospice functions have been performed by family members. Even now the standard nursing home carries out this tradition in its own unsatisfactory way: it falls to the patient's family to arrange for the "home," pay the bills, and provide whatever emotional support the patient is to receive. I wish to suggest that hospice and nursing care is due to gay patients from the state as a matter of compensatory justice for society's and government's destruction of the possibility of the creation of gay families.

Fifty percent of non-gay marriages fail even when they are given the highest imprimatur which society has to offer and luxuriate in substantial attendant material benefits. It is surprising, indeed amazing, therefore, that any gay relationships survive. If society will not let you be gay by ones, it certainly will not let you be gay by twos.

Hatred of gays as internalized by gays—a condition magnified and darkened by the AIDS crisis—is probably the leading cause of the failure of gay relations to materialize and mature. If matrimonial love entails unqualified acceptance of the beloved, the taint of self-hatred will vitiate gay love. Further, where discrimination against gays is widespread, it is unlikely that gay couples will flourish. For acting as a couple tends to cast one's affectional preferences into the public realm and so makes one a target of discrimination.

It perhaps goes without saying that attempts of gays to create blood and extended families of their own have been blocked at every turn by society and now increasingly by the state. Many states have recently been

codifying into statute and regulation what has been the reality in practice all along—the exclusion of child custody, adoption, and fostering by gay couples. These policies systematically block the creation of gay familial units and indirectly contribute to the decay of gay relations by appealing so directly to an alleged wickedness of gays, as corruptors, and an alleged worthlessness of gays, as role models.

Compassion would suggest and compensatory justice should require that the day-to-day care of the

final-stage AIDS patient be provided in lieu of the care he would have likely had but for society's blocking his creation of his own family.

—Richard D. Mohr

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Income and Development

The term "development" and terms such as "less developed," "undeveloped," and "underdeveloped" are universally used in talking and thinking about change in the Third World. There are journals of development economics, textbooks on the process of development, organizations devoted to development. It is therefore striking that for all that has been written about development and how to achieve it, relatively little attention has been given to the basic question: What is development?

The notion of development suggests something of a natural process that an entity goes through. Thus we might speak of the development of an acorn, or of a child, but not the development of a stone or of a bookshelf. Moreover, the process envisaged is not a matter merely of change, but involves the working out of the *potential* of the entity. When an acorn develops into an oak tree, the change that takes place is coming from within; outside elements serve only as an environment within which the oak can develop into itself and in so doing fulfill its potential. The notion of development, then, carries within it the complementary notions of actualization, growth, maturity, fullness of being.

Given these particular features of the concept of development, it is striking that we speak of nations, economies, and societies as developed and undeveloped. Just what we mean by "potential," "maturity," or "fullness of being" when discussing economies and societies is elusive. Thus, economists, planners, and decision-makers typically turn to some notion that can be more easily articulated and more readily used as a guide to policy choices. The notion of economic growth is appealing in this way. An economy has grown if and only if the pile of goods and services produced by that economy (the total or per capita output) in a given time period is larger than the pile it produced in the previous time period.

But we cannot equate development with growth. Simply growing larger carries with it no notion of maturity. In principle, a mature elephant could get larger

and larger, yet we would not say that the giant elephant was more advanced or had more fully realized its potential than had normal-sized elephants. Similarly, economic growth does not necessarily imply that the society is becoming more developed, or even that the economy is becoming more developed.

Economic *development*—as an ideal Third World countries are supposed to be striving toward—must depend on something broader. An economy is more developed, not if it produces an ever-larger pile of goods and services, but if it more fully contributes to the development of the society as a whole. And a society is developed insofar as it makes possible the development of the human beings within it. It is the notion of human development that is our central concept.

Income versus Basic Needs

How is one to link an appraisal of societies to judgments about the kind of human beings they give rise to? Almost all modern thought about development is egalitarian in the sense that there is concern with the *breadth* of human development rather than the *depth*. It does not measure development by the heights of human greatness achieved in a given society, but by the general level of human well-being. But within a general egalitarian framework, the distinction is made between three broad approaches to economic development that go under the rubrics: "trickle down," "equitable growth," and "basic needs." These three views adopt different understandings of what counts as development progress, of what it is for an economy or a society to *be* developed. They also differ with respect to *how* to achieve development—but that is not our immediate issue.

For both the equitable-growth and trickle-down conceptions the central good to be attained is higher income. Moreover, while it is clear that equitable-development advocates care about the distribution of income, the trickle-down conception is also concerned

with distribution. The point of arguing that higher levels of overall GNP *will* trickle down through the society is to attempt to show that aggregate economic growth benefits *everyone*.

The two views have a fundamental difference with respect to the goals of development, however. The claim that economic benefits trickle down contains an implicit suggestion that so long as everyone, or almost everyone, ends up benefiting, all is well. The question of *how much* trickles down to *how many* is generally not raised by trickle-down advocates. It is sufficient that most people have higher incomes, whether or not there may have been some broad increase in inequality.

On the equitable-growth orientation, an increase in most people's—or even everyone's—income does not automatically constitute progress. Whether or not progress has occurred is a matter of the balance between the gains in income and the loss of equality. If there is a broad increase in inequality of income then the growth in income for the poorer classes would have to be significant; not any increase is adequate.

Now let us compare these income-based orientations to the basic-needs approach. The basic-needs theorist makes two observations. First, having more income is not a good in itself; what is important is satisfying basic needs. And second, we cannot assume that needs are better satisfied at higher income levels. A great deal depends on the composition of output, on the quantities and prices of the goods and services that are available for purchase with private income, and on the extent and quality of a wide variety of goods and services that are typically provided by the government (health services, education, water quality).

Both the trickle-down orientation and the equitable-growth orientation are prepared to accept income and its distribution as adequate indicators of developmental progress. They argue that income allows people to satisfy their preferences, and that there is no valid basis for giving priority to some other pattern of consumption than that actually chosen by the individual (and the public sector to which he is subject). The basic-needs orientation is unwilling to take income as an index of developmental progress. It insists on looking at the extent to which basic needs have actually been met, at the extent to which problems such as hunger, malnutrition, illiteracy, infant mortality, and disease have actually been overcome.

Earlier I maintained that a concept of societal development rests on something more fundamental, on a notion of human development. What basis is there for going from the claim that people have a higher level of income or basic-needs satisfaction to the claim that they have achieved a higher level of development?

Orientations that view income as ultimately significant regardless of the extent to which it results in need satisfaction will be hard pressed to establish the connection. But there is a logical link between the notion of needs and the notion of development. To see this, consider how it is that we distinguish between something that someone *needs* and something he *wants*. Peo-

ple want all sorts of things; there are only a limited set of things that they need. Moreover, they need these things whether or not they want them. Basic needs are no mystery, consisting essentially of food, shelter, clothing, health care, and education. To call something a basic need is to say that in its absence the most basic physical and intellectual development of the individual will be blocked. Thus, a basic-needs conception of development understands by developmental progress the elimination of conditions of mass deprivation that prevent the fuller development of the individual. Income approaches to development can make this connection only insofar as income is taken to be a reliable indicator of basic-needs satisfaction, and this, of course, is a highly questionable assumption.

The Case Against Getting Richer

Once basic needs have been taken care of, however, what is the relationship between human development and increasing wealth? One school of thought is that beyond a certain point the relationship is antithetical: accumulation leads to greater taste for accumulation, appetite merely begets further appetite, and in the end human development suffers as we become further engaged in the processes of accumulation and consumption. Few of us in the rich societies have not, at least for some brief moment, paused to wonder if in fact our involvement with "things" hadn't gone too far, hadn't in some ways taken us away from some undefined pursuit that is more important.

The case that can be made for economic progress well beyond the level of pure subsistence does not have to do with the value of things, but with the value of time. The greater value of higher levels of productivity is not that they make possible higher levels of consumption, but that they make possible lower levels of labor. The impoverished are forced to spend an enormous amount of time in activities that are ultimately destructive of their human potential. What the rich have, at least

What the rich have, at least potentially, is the time to devote themselves to those things that are worth doing for their own sake. Their time—that is, their life—is no longer a means to the attainment of the means of staying alive.

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If someone spends a major part of his waking hours engaged in activity that fails to serve as a vehicle for personal expression, does not embody his values, does not provide for him either the esteem of others or his self-esteem, and is not a vehicle for his personal growth, then his participation in economic life is

destructive of his development, except insofar as it provides him with the resources and leisure time to pursue that development in other spheres of life.

Put in different terms, there are two possible notions of a developed economy. In both, a developed economy is one that contributes to the development of the human beings who participate in it. The distinction is between extrinsic and intrinsic impacts on human development. The primary extrinsic impact on human development is the provision of income and financial security. The intrinsic impacts have to do with the wide range of direct effects economic activity has on psychological, intellectual, and moral development.

There is no Third World country today in which the life style of the rich countries is not known, and in which the tastes of the poor are not shifting toward appetites for what they do not have and will never attain.

Human health is precarious—activity that is not intrinsically healthful cannot be undertaken for long before it harms the individual. A developed economy which rests primarily on the extrinsic contribution of economic activity is possible only if work time is reduced to a relatively minor portion of a person's time. An extrinsically developed economy would provide the economic resources and financial security that allow individuals to pursue that which is worthwhile in itself with only, say, ten hours of work a week. The wealthiest economies today have this potential. In fact, however, these economies operate within a broader social life that does not permit individuals to avail themselves of this potential. The central dynamic is that at the income and consumption levels that would correspond to ten hours of work a week, the individual can rarely achieve self-esteem or the esteem of others. A person who works ten hours a week and lives on the average income that ten hours provides would be a misfit in our society. Periodically certain subcultures attempt to free themselves from material attachments—to develop an alternative shared understanding of the bases of personal and social esteem. But without cultural change that redefines the meaning of income and consumption, only isolated individuals can take advantage of the potential for extrinsic economic development that wealthy societies provide.

The other notion of a developed economy is one that provides for human development intrinsically, through forms of work and organization that are inherently enriching and thus promote rather than stunt human development. On a mass basis no such forms have yet emerged. Indeed, many have argued that we have moved toward forms of economic life that are intrinsically destructive of human development.

In general, over the last fifty years, Americans have

taken most of the increase in labor productivity in the form of higher income rather than in the form of less labor time or more self-developing forms of labor. *Our economic life is neither extrinsically nor intrinsically developed.* And just as we have been undone by the rising level of income and consumption all around us, which has changed the social meaning of lower levels of income, so today the world is being enmeshed in our consumption styles. There is no Third World country today in which the life style of the rich countries is not known, and in which the tastes of the poor are not shifting toward appetites for what they do not have and will never attain. The implications of this are horrifying. The following table shows the number of years it will take various developing nations, at current growth rates, to catch up to the income levels of the rich countries.

The GNP Race

Country	\$ GNP per Capita 1983*	Annual Growth Rate GNP/Capita 1965-83*	Number of Years Until Gap Closes if 1965-83 rates continue
Industrial Market Economies	11,060	2.5	
Korea, Rep. of	2,010	6.7	42
Brazil	1,880	5.0	73
Syria	1,760	4.9	79
Yemen Arab Rep.	550	5.7	98
Ecuador	1,420	4.6	101
Indonesia	560	5.0	124
Egypt	200	4.2	167
China	300	4.4	196
Philippines	760	2.9	687.5
Morocco	760	2.9	687
Sri Lanka	330	2.9	902
Cameroon	820	2.7	1334.7
Costa Rica	1,020	2.1	Never
Kenya	340	2.3	Never
India	260	1.5	Never
46 other developing countries (e.g., Bangladesh, Zaire, Burma, Tanzania, Haiti, Pakistan, Bolivia, Peru)			Never

*Source: The World Bank, World Development Report, 1985 gap calculations by author.

What we need is an egalitarian concept of development that will function to advance the genuine development of the poorer nations. The notion of equitable growth will not do this. Even at rapid rates of equitable growth, the vast mass of mankind will be engaged indefinitely in pursuit of the income levels of the rich countries. We need a type of development that will allow the masses of mankind quickly to overcome the most debilitating aspects of their poverty and then to avoid transforming themselves into a mere means for the advancement of their incomes. In short, we need a notion of development that will permit the overcoming of the worst poverty-induced obstacles to human development and at the same time will articu-

late what it is to have a developed society and to be a developed human being at low levels of income. I have argued that a basic-needs conception of development is a central part of this notion. Basic needs can be satisfied at relatively low levels of income, but only if a society deliberately seeks a development path that will do so.

It may be objected that this is all very nice for those in rich countries to espouse because it leaves them at the top and tells the rest of mankind to settle for less. This objection misses the point. The prescription of low

incomes and high leisure levels is not offered merely to the poor. It also represents the direction that we in the rich countries should go in, if we are to become not just rich, but truly and fully developed.

—Jerome Segal

Jerome Segal is a Research Associate at the Center for Philosophy and Public Policy and Senior Advisor for Agency Planning at the Agency for International Development (AID). This article is condensed from his Center working paper "What Is Development?" The views expressed are not necessarily those of the U.S. government or of AID. To order "What Is Development?" see page 15.

The Biotechnology Controversy

Biotechnology, according to most commentators, promises to revolutionize industry and everyday life. The British journal *The Economist* predicts that "biology will launch an industry as characteristic of the twenty-first century as those based on physics and chemistry have been of the twentieth century." Statements such as this express the sense of exhilaration and apprehension which, over the past few years, has produced screaming headlines, Promethean prospects, stock-market fever, and all sorts of intellectual inflation. On even the most conservative view, however, new developments in biotechnology are likely to affect the way we think about the living world and the way we understand our relationship to it.

Nature and Society

Anthropologists, in describing the tribes they study, frequently emphasize the relation between the social structure of the tribe and its cosmology or view of nature. Among these anthropologists, Mary Douglas most prominently has argued that "the moral commitment of a community to a set of institutions" is secured by its view of what is natural and what goes contrary to nature, in other words, "how the environment will react." The conception of nature implicit in social arrangements and institutions, according to Douglas, "exists as a structure of meaningful distinctions." The social order begins to come apart, she adds, when "separate voices claim to know about different environmental constraints" and different visions of nature contend for credibility.

It is commonplace to point out that the great social and cultural revolutions in society have been accompanied by—and are to an extent caused by—major changes in assumptions about nature and the place of humanity in it. The cosmology of pretechnological societies, for example, found in nature all sorts of omens and meanings by which people could explain natural events to themselves (e.g., as divine rewards

and punishments) in order to give significance and importance to their own actions. The distinctions tribal societies drew between the pure and the polluted, the safe and dangerous, often served to legitimate power relationships and the rules and conventions which governed behavior in those societies.

After Galileo and Newton, a conception of the living world became dominant which reflected the order scientists had found in the physical world. The eighteenth century presented nature as a masterpiece of organic forms set together in a perfect design by a benign creator, a Great Chain of Being. A hierarchical and conventional order in society—where each group understood its station and its duties—reflected this idea of an immutable and static order in nature.

After Darwin, the nineteenth century experienced a reversal in its conception of the way the living world is organized. In the early days of evolutionary theory, Social Darwinists were quick to extend the ideas of competition, struggle, adaptation, fitness, and change from plant and animal communities to human societies, thus making "natural" the "great transformation" of land and labor into fungible, marketable commodities. It was only after a great deal of humane reconsideration—a battle still going on today in the arguments over sociobiology—that culture and nature were sufficiently distinguished to overcome some of the excesses of the Social Darwinist and eugenics movements.

By the 1960s, evolutionary theory had become established and with it a historical appreciation of man's origin and place in nature. In the United States, the environmental movement emphasized the importance of preserving the products of natural history, particularly biological communities, the "integrity" of which, so they argued, supported human survival. Environmental legislation enacted during the 1960s and 1970s called upon the nation to preserve the "health" of ecosystems, the "integrity" of the nation's waters, and the "balance" of natural populations. These laws

presupposed the idea that biological communities have a character or an identity we should preserve and respect. The environmental law of the 1960s and 1970s did not regard nature as a congeries of raw materials fit for limitless human intervention and manipulation but as a system of natural resources and communities which should be altered as little as possible.

Growing interest in work on recombinant DNA during the 1970s challenged the idea that there are boundaries in nature (whether put there by God or by evolutionary history) that we should respect or that we cross at our peril. The "Recombinant DNA War" pitted two strong ideological positions against each other. On the one side, members of religious communities together with many environmentalists and members of the concerned public felt that there is something sacred about life, something about the identity of species we should respect, and that no good could come from crossing lines that either God or Nature had drawn. On the other side, many scientists and others considered fears such as these superstitious and regarded nature more as an object of endless manipulation, investigation, and use than as an object of ethical, religious, cultural, and aesthetic concern.

Debate over the risks and hazards posed by "designer genes" and recombinant DNA masks more fundamental differences concerning the extent to which we should preserve nature and the processes which are somehow "intrinsic" to it vs. the extent to which we may view the living world, quoting engineer Edward Yoxen, as "a vast organic Lego kit inviting combination, hybridization, and continual rebuilding."

Natural Resources vs. Raw Materials

On college campuses during the 1970s, Hans Bethe, the eminent nuclear physicist, and Barry Commoner, the environmental activist, debated issues involving the dangers of nuclear power and pollution. In these debates, when Commoner spoke of the depletion of natural resources, Bethe would respond vehemently that there are no *natural resources* but only *raw materials*. Behind the conceptual difference between "raw

materials" and "natural resources" lies a fundamental distinction for evaluating new technologies and justifying regulations.

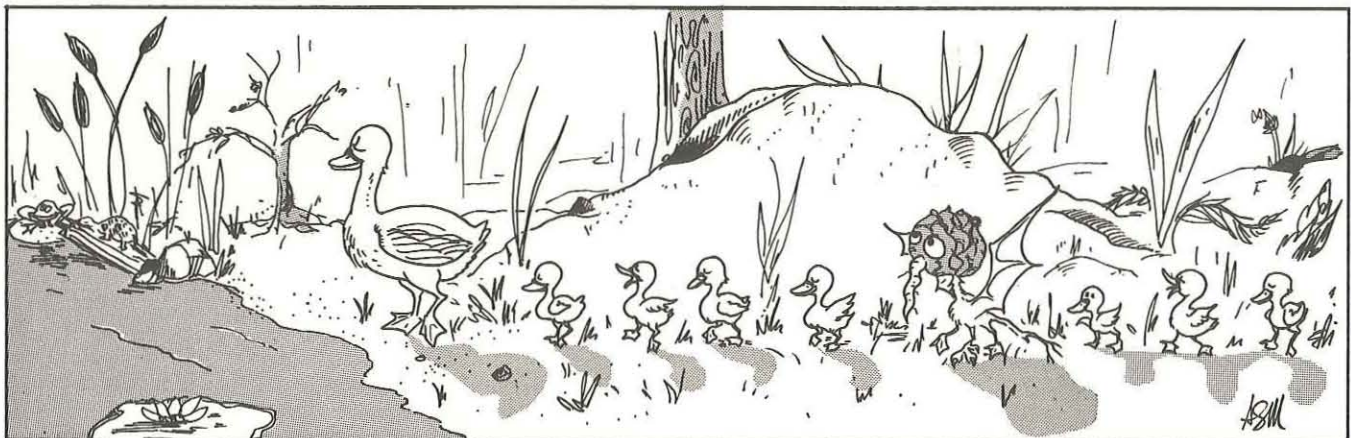
For Commoner, natural objects come in natural kinds; form determines function. When we force or cross natural boundaries too often, as by an incautious and intrusive use of technology, we court environmental disaster. For Bethe, things do not have essences or forms determining their function. Rather, our cleverness in molding and manipulating materials to meet our needs determines what objects exist and the value they may have for us. Technology is the key to cornucopia, not the cause of catastrophe.

The distinction between natural resources and raw materials epitomizes the two sides in the debate over nuclear technology, but it also is relevant to the controversy surrounding biotechnology. Those on one side of the debate assert that the history of evolution has made natural species and ecosystems what they are and has given them forms or essences which we ought to respect. We engage in manipulation at our peril. Those who inherit Hans Bethe's position, on the contrary, tend to see nature as a collection of materials which mankind manipulates to serve its interests and ends.

Two Concepts of Ecosystems

These two approaches motivate two different strategies for environmental management, for example, in the Chesapeake Bay. In the past, the major emphasis in Chesapeake Bay management has been to clean up the Bay or otherwise restore natural conditions so that the species adapted to it, e.g., striped bass and winter flounder, may thrive. Biotechnology presents an opportunity to work in the opposite direction. We may change the genetic structure of those species so that they can better survive in the Bay as it is or as it may become as a result of increasing pollution. This may be a more efficient strategy for fisheries management.

It is not unlikely that there will emerge as a consequence of biotechnology two different trends in ecological research. One may be tied to natural history and will study systems like the Bay as natural resources



whose form is somehow "given" by events in the past. A second trend will investigate systems as independent of their histories, as reactions among raw materials, biotic and abiotic, of various sorts, all of which may be amenable to manipulation.

The question then may arise which conception of the ecosystem we should use in formulating and enforcing environmental regulations. To insist on the first conception, which ties the ecosystem to its past, would lead us to limit the degree to which we can alter the makeup of bass, flounder, and other species to allow them to thrive in waters which are no longer fit to support them otherwise. We might require, indeed, that these fish be treated as indicator species, and believe that their disappearance suggests that pollution be

tain natural and cultural resources and ecological systems."

During the 1960s and 1970s, many environmentalists and others argued that the goals of *increasing the value of goods and services* and *preserving ecological systems* were generally consistent, since ecological systems support human life and provide all kinds of goods and services. Yet, with respect to specific resources and ecological systems, it is often hard to argue that protection rather than alteration and exploitation is the best way to maximize the flow of goods and services nature offers man. The Chesapeake's role as a liquid highway, for example, does not depend upon the maintenance of a "natural" ecological system. What is more, the production of commercial fish and shellfish, it is often

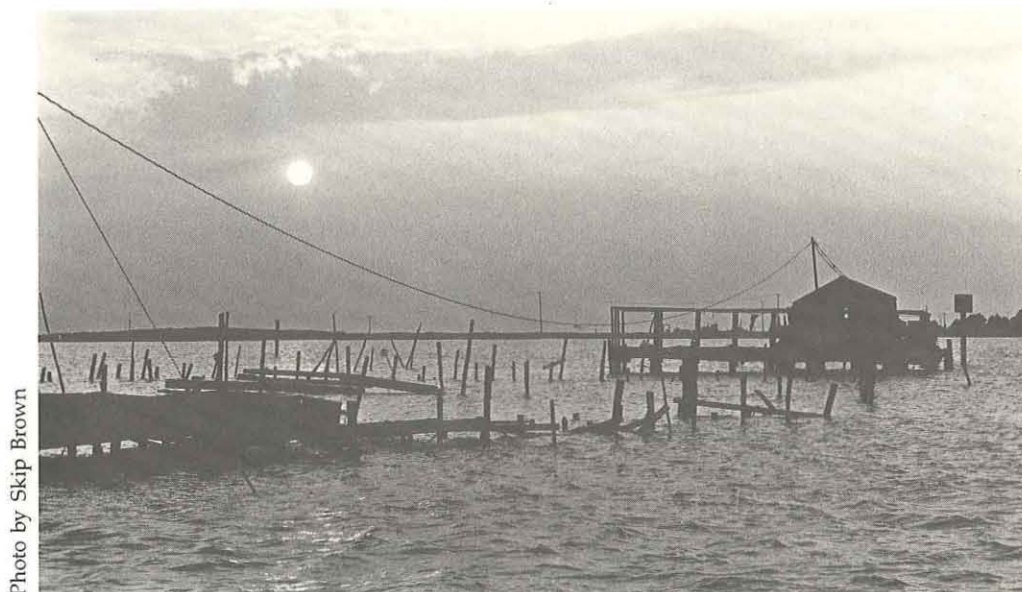


Photo by Skip Brown

The Chesapeake Bay

reduced, not that they be altered to survive it. On the other hand, we may think of ecosystems completely in technical ahistorical terms. In that case, genetically engineered species, even if they bear little or no relation to "natural" ones, could form biological communities as interesting to study and as worthy of protection, *prima facie*, as any which have evolved over 10,000 or 100,000,000 years.

Two Mandates for Management

The Water Resources Council in 1973 stated in its *Principles and Standards* that the use of the nation's water and land resources should "be directed to improvement in the quality of life through contributions to the objectives of national economic development and environmental quality." It defined these objectives respectively as: "to enhance national economic development by increasing the value of the Nation's output of goods and services and improving national economic efficiency" and "to enhance the quality of the environment by the management, conservation, preservation, creation, restoration, or improvement of the quality of cer-

argued, would be far more efficient were the Bay managed on aquacultural principles, i.e., as privately held aquacultural plots, rather than as a "commons."

Developments in biotechnology are likely quickly to force the question of whether we wish to regard the Bay, e.g., as a natural resource to be treasured and protected for its biological communities or as a collection of raw materials to be managed to maximize the goods and services it may then produce. It seems that the development of marine biotechnology should be sensitive both to historical or aesthetic and to economic concerns. We owe more to the history and beauty of nature—we value the grandeur of evolution too much—to regard nature simply as a material basis for economic exploitation, however far-reaching our biotechnological potential for exploitation may become.

—Mark Sagoff

The Mary Douglas quote is from "Environments at Risk," in *Implicit Meanings* (New York: Routledge, Kegan, Paul, 1975); the Edward Yoxen quote is from *The Gene Business: Who Should Control Biotechnology?* (New York: Harper & Row, 1983).

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