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THE CASE OF THE SPELUNCEAN POLLUTERS: SIX THEMES OF ENVIRONMENTAL LAW, POLICY, AND ETHICS

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ESSAY

THE CASE OF THE SPELUNCEAN POLLUTERS: SIX THEMES OF ENVIRONMENTAL LAW, POLICY, AND ETHICS

By
J. B. Ruhl*

Almost as soon as it was invented in the early 1970s, the United States' modern environmental law framework has been the subject of calls for reform. Six divergent reform approaches predominate that debate today, and behind each lies strongly held policy and ethical perspectives. Using the futuristic setting Lon Fuller created in his classic study of legal theory, The Case of the Speluncean Explorers, Professor J.B. Ruhl pits those environmental law approaches against each other as society finds itself on the day of reckoning for the environment in the year 4310 AD. The discovery many centuries earlier of a remarkable substance, placidium, had allowed society to make resource use decisions without environmental consequences, or so it seemed. But the supply of placidium has run dry, and the Supreme Court must decide the framework for making environmental policy decisions for the now precarious future. Not surprisingly, the Court confronts the same divided perspec-

* Assistant Professor of Law, Southern Illinois University. LL.M. in Environmental Law 1986, George Washington University; J.D. 1982, B.A. 1979, University of Virginia. I have modeled this Essay on Professor Lon Fuller's masterful exploration of the various paradigms of legal theory that prevailed in the middle of this century. *See* Lon Fuller, *The Case of the Speluncean Explorers*, 62 Harv. L. Rev. 616 (1949). Perhaps as much as is true in legal theory, and probably more so than for any other substantive field of law, environmental law encompasses many schools of thought proceeding from vastly different, often sharply conflicting premises of what is the "right thing" to do with respect to law and policy. Professor Fuller's fictitious setting of the Commonwealth of Newgarth in the year 4300 A.D., and of a supreme court deciding an unsolvable puzzle of law, thus provide a fitting vehicle to explore contrasting jurisprudential theories of environmental law in their clearest and starkest forms. In keeping with the spirit and format of Professor Fuller's thoroughly enjoyable work, this is the first and last footnote in *The Case of the Speluncean Polluters*! This is not to suggest, of course, that others have not shaped and contributed to my attempt to summarize the richness and diversity of environmental jurisprudence, but only that they are too numerous to identify through the traditional means of footnotes. Therefore, a suggested reading list is supplied at the conclusion of the Essay. I owe special thanks to Pat Kelley, Fred Cheever, and John Nagle for their insights on early drafts of this Essay

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tives we find in play today, on the brink of the second millennium. As we have no substance like placidium on our horizon, and many believe the environment can withstand no more of humanity's demands, perhaps we can learn something from the Court's opinion of the future.

In the Supreme Court of Newgarth, 4310 A.D. The parties, having participated in the administrative proceedings of the Environment Agency and in the judicial review proceedings of the District Court and Intermediate Court below, brought these appeals, and we granted review. The facts sufficiently appear in the opinion of the Chief Justice.

MS. CHIEF JUSTICE COSBEN, *with whom* MR. JUSTICE RISCANLYS and MS. JUSTICE REGULADO *join, delivered the following opinion.*

It was only ten years ago that the demise of Roger Whetmore at the hands of his fellow spelunkers, in what is now known as Whetmore Cave, led to sharp divisions of opinion between the former members of this Court about the correct application of Newgarth criminal law. Now we find ourselves again with Whetmore Cave at the center of controversy, this time in the context of environmental law and policy.

Since its discovery in the year 2000 A.D. and for the past two millennia, the *Poroxisis blarissium* spore, known commercially as placidium, has served to enhance our society in many fashions. Its molecular energy and strange biological properties have provided a seemingly boundless supply of clean and efficient power sources. Its various chemical applications have allowed us to avoid or reverse many environmental maladies and to feed many impoverished peoples. With each instance of concern over the relentless depletion of yet another natural resource, such as timber, coal, petroleum, metal ores, and potable fresh water, some application of placidium's miraculous qualities has provided a solution which allowed our continued economic and social prosperity despite the continued loss of that resource.

Alas, placidium, with all its benefits, has also led to a complacency that puts us in the quandary of this case. As a society we have developed highly advanced technologies that provide all our needs, with placidium having served as both the source of technological advance and the solution to the pernicious side effects of technology such as pollution and resource depletion. But we have used placidium faster than it regenerates in nature, and have found no way to reproduce it in the laboratory, or to synthesize its molecular structure. Our skill in finding it, ingenuity in transforming it, and dependence on using it have led to its near depletion from the face of the planet. We find ourselves now having exhausted all known sources of placidium except for what is found in Whetmore Cave. We are thus faced with the decision of what to do with Whetmore Cave, which very much involves the decision of what to do with society.

Unfortunately, the complacency of the last two millennia has also led to an atrophy of legal processes for making such decisions. Because placidium has made all other resource depletions and technological side effects virtually irrelevant and costless to our society, or seemingly so, we have had no occasion in the past two thousand years in which we were

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forced to allocate and balance competing environmental and social resources. We appear thus to have forgotten how to do so. It is incumbent upon this Court, therefore, to strike a paradigm of environmental law and policy for the future where none exists today.

I

The factual and procedural background of this case is not complicated, but leads to complicated issues.

A

The story of Roger Whetmore's demise is well known in Newgarth and provides the genesis of this case. In May of 4299. he and fellow spelunkers entered the interior of a limestone cavern of the type found in the Central Plateau of this commonwealth. The companions became entrapped in the cave after a rockslide, and efforts to rescue them were severely hampered. Faced with imminent death, and over Whetmore's advice against the plan but with his consent to participate, the group agreed to draw lots to determine whose life would be taken to provide nourishment for the others until rescuers could reach them. Whetmore lost that lottery and his life, and the others eventually were rescued alive. Following criminal proceedings and convictions against them, this Court, in a divided opinion, upheld their sentences of death.

After their executions, the research notes of one of Whetmore's companions and killers, Grayson Grant, eventually found their way into the hands of Glaxon Corporation, today the world's leading producer of placidium spores and supplier of placidium products. According to the notes, Whetmore Cave, as it had come to be known, contains bountiful supplies of placidium spores—enough to supply the world's needs for fifty years. This discovery was considered by Glaxon, and by most of the world, as quite fortunate, since Glaxon had announced in June of 4304 that its proven reserves of placidium had dwindled to a twenty-year world supply, and no other producers were in operation. Glaxon had conducted an exhaustive worldwide search for new sources, and had found only the promise of Whetmore Cave by the end of its effort.

Glaxon's discovery was considered quite fortunate—indeed, on the order of a miracle—simply because of how dependent our world society has become on placidium for all its essential needs. Placidium, discovered by Glaxon's founder over two millennia ago, is an unusual biological agent possessing unusual qualities. It can be harnessed for energy production in amazing efficiencies. It can easily be chemically converted into a variety of substances that provide, among other things, the raw materials to synthetically produce sources of nutrition, building materials, clothing, medicines, and potable water. It can be used to neutralize pollutants of all varieties, allowing easy recycling of the toxic spent materials and byproducts associated with our highly industrialized society.

Of course, these uses of placidium were not known immediately upon its discovery. Rather, over the centuries Glaxon has advanced its research

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of placidium time and again to allow society to avoid environmental and social disaster. For example, when in 2040 scientists conclusively showed that the phenomenon then known as global warming would, within ten years from that date, irreversibly destroy the earth's capacity to support life, Glaxon discovered a process using chemicals derived from placidium to reverse the effects. And as world supplies of timber and metal ores dwindled to precariously low levels during the twenty-seventh century, Glaxon produced synthetic building materials using placidium derivatives that surpassed all properties of wood and metals. And in 3010, when widespread fungal infestations destroyed the entire world's crops and seed banks, Glaxon only weeks later developed a process based on placidium to produce an abundant source of nutritious food.

Glaxon's record of pulling society from the breach has continued unblemished through the centuries. Indeed, for the past five centuries, despite the paucity of naturally occurring timber, metal ores, potable fresh water, coal, and petroleum, despite the difficulty of raising crops sufficient to feed all nations' populations, and despite the frequent collapses of fish stocks in our world oceans, our society has prospered to levels never imagined at times when those resources were bountiful in nature, all because of placidium. For the past two hundred years, moreover, we have been able to halt further exploitation of the planet's few remaining preserves of natural and biological resources, and have even made strides in restoring stands of parkland and agricultural land to serve as places of recreational and aesthetic enjoyment as well as scientific research. Only continued supplies of placidium, however, make it easy for society to contain those precious areas from human need.

Hence, Glaxon's interest in Whetmore Cave was understandable. The company purchased the cave in 4305, and began to prepare it for placidium extraction. Placidium is found only in subterranean limestone features. The placidium extraction process involves the repeated injection of various gases into the cave space, which react with placidium spores to make their location and extraction easier. The effect of the gases, however, is to kill all life forms in the cave and to render the cave uninhabitable for many years thereafter. (The placidium is removed by robotic machines.) Additionally, the gases tend to permeate into the surrounding subterranean water and soils, causing their long-term pollution. Of course, placidium could be used to neutralize the pollution, but it is usually destined for other more cost-effective uses. Thus the area around placidium mines generally is left to become a wasteland.

By May of the year 4306, Glaxon had made all the necessary preparations for instituting this process at Whetmore Cave, when the leading environmental group of Newgarth, Earth One, learned of the company's plans and complained to the Environment Agency. Earth One revealed that it had obtained the research notes of another of Roger Whetmore's companions, Lisa LeMaster, a biologist who had recorded an abundance of rare species within the cave. Indeed, Earth One's further research had indicated that Whetmore Cave houses the last known specimens of over two hundred different species of amphibians, invertebrates, snakes, fish, and

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bats. By all scientific accounts the cave's discovery was a virtual gold mine of new biological information. Obviously, Glaxon's plans for placidium extraction threatened the continued existence of those species.

After Earth One revealed its information, an organization known as Justice! came forward also to register its concerns about Glaxon's plans. Justice! advocates a more equitable distribution of the benefits of our society, and has focused in many other settings on income disparities that exist, Justice! alleges, because of racial, ethnic, and other prejudices of society. In 4305, Justice! had issued a report correlating the locations of Glaxon's placidium mines with high incidences of birth defects, cancer, and other medical problems in the local populations. Moreover, alleged the report, the local populations invariably consisted of low income, minority citizens. Justice! demanded to know what Glaxon would do to correct these alleged injustices and to prevent them from happening at Whetmore Cave.

B

Notwithstanding the complaints of Earth One and Justice! outlined above, Glaxon announced its plans to begin the placidium extraction process. In August 4306, Earth One and Justice! filed a petition with the Environment Agency requesting that the agency enjoin Glaxon from commencing its operations pending a full review of the situation by the agency.

The Environment Agency is authorized to administer the Environment Act, which, besides the provisions establishing the agency and providing for its funding and operation, consists of just one substantive provision stating, "[t]he Environment Agency is authorized to regulate all matters affecting or involving the environment in the most appropriate manner, using the most appropriate standards and criteria for such purposes." 15 N.S.C.A. (N.S.) § 5. This rather compassless legislative directive, adopted in this form in 4100, is representative of the modern legislative practice of delegating power to administrative agencies in almost unbounded capacities. We have held in similar contexts, nevertheless, that by constraining the agency to the "most appropriate" manner of regulation, the Newgarth Legislature has satisfied the constitutional requirement that when delegating power to agencies it provide "comprehensible principles" with which the agency can implement the statutory directive, and courts may review the agency's action. *See Larson v. Revenue Agency*, 78 N.55th 7890 (4167).

At the time Earth One and Justice! lodged their petitions, however, the Environment Agency had no regulations or policy for deciding whether and how to license placidium mines, or any other form of mining operation for that matter. Over the centuries of its placidium mining and production, Glaxon has simply obtained approval from the agency for its activities by general permit, and not since 2256 has any citizen requested what Earth One and Justice! have requested the Environment Agency to do with respect to Glaxon.

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Acting in this vacuum of regulatory licensing practice, the agency issued a temporary order enjoining Glaxon from proceeding with its operations and promptly thereafter convened a hearing in which Glaxon, Earth One, and Justice! participated as full parties. The hearing spanned five months, during which time the parties presented testimony and other evidence establishing the facts outlined above. Several weeks after the close of the hearing, without providing a statement of its rationale, the Environment Agency rendered an order allowing Glaxon to proceed with the operations, but containing the following provisions and conditions: 1) Glaxon must preserve one area of the cave, about one-quarter of its total volume and containing one-third of the placidium deposits, and prevent any ill effects of the gases and other mining operations from affecting that portion; 2) Glaxon must pay compensation to all residents living within ten miles of the surface opening of Whetmore Cave, to each in an amount sufficient to allow either relocation out of the area to comparable housing, or long-term medical monitoring and care should a resident choose not to relocate; 3) Glaxon must finance the pre-extraction relocation of as many species individuals as possible from the injured portion of Whetmore Cave to another cave that the Environment Agency shall select and Glaxon will purchase and maintain in perpetuity; and 4) Glaxon must establish and support an alternative energies and technologies research foundation to be financed through a ten percent levy placed on Glaxon's gross revenues from sales of placidium crystals that are taken from Whetmore Cave and the products made therefrom.

All parties appealed from the Environment Agency order to the District Court for the Central District. The trial court, consistent with our decision in *Groton v. Agriculture Department*, 100 N.60th 62 (4209), construed the amended Agency Procedure and Review Act, 3 N.S.C.A. (N.S.) § 42, to require that the court uphold the agency's action unless the court could think of absolutely no rational basis therefor. Using that standard the trial court found, after oral argument and review of the record evidence, that the agency had "struck a fair and rational balance of interests" and thus its order should be upheld. On appeal by all parties, the Intermediate Court for the Third Circuit affirmed without opinion.

II

We are confronted in this case, in a way we have not been for over two millennia, with the imminent possibility of a world without placidium. Without placidium, we may have no way of meeting all the world's sustenance and sheltering needs. Without placidium, we may have no way of avoiding the pernicious effects of industrialization on humans and the environment. Without placidium, in other words, we may find ourselves, between nations, within nations, even amongst local communities, competing fiercely for unthinkably limited resources and searching in vain for measures to protect human health and the environment.

Our decision in this case, therefore, can take nothing for granted. We are writing on what appears to be a clean slate to determine what, in the

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words of our applicable environmental statute, is the "most appropriate" approach for making difficult choices in a world of limited options. Although this Court is new at the task, I find in this regard that the Environment Agency's decision indeed was consistent with what I believe should be considered the "most appropriate" method of resolving environmental law and policy issues for the bleak picture of the future I have unwillingly painted.

Placidium has lulled us into believing that we may be concerned with only one side of a two-sided question that must be posed when confronted by limited resources. That is, placidium has allowed us to present all choices as having only benefits, and no costs or risks. If Glaxon is correct, however, that the world's placidium supply will run dry in fifty years at best, or thirty years under the Environment Agency's order, our choices for the future will necessarily have to take into account the probability of long-term costs and risks associated with every option. How will we know what to do in that world? How will we decide which of many options is the correct choice? Hidden within the Environment Agency's order I find the answer—we must perfect the art of assessing the risks, and weighing and balancing the costs and benefits of every option, so that we may regulate intelligently given our knowledge of needs and capabilities. When I conduct that analysis for the situation before this Court, I reach a decision very close to the Environment Agency's regulatory order; therefore, I can only conclude that the Environment Agency's order is sound.

A

Each decision we make about a resource use carries with it costs and benefits at a macrosocial scale. Without giving it much conscious thought, people constantly evaluate the probable risks and relative costs and benefits of many commonplace decisions, such as whether to indulge in a rich meal or to exercise, or which home to purchase. These trade-off decisions are made all the time at higher social levels as well, such as in our decisions about tax and spending policies. Sound environmental policy requires that we develop a framework for making the same decisions about resource uses, the regulation of toxins, the control of pollution sources, and the like—that is, a method for 1) quantifying estimates of the costs and benefits of alternative environmental policies, and 2) comparing the resulting quantifications across the spectrum of policy alternatives.

To be sure, doing this at the level of society's environmental policy will not be as easy as is the individual's choice of dining menu. There will be uncertainty about any value number assigned to costs and benefits. Seldom, for example, can we predict with absolute scientific confidence the health risks posed by exposure to some newly formulated chemical. The risk assessment process in such cases is an exercise in probability undertaken in the midst of nagging uncertainty. Indeed, the threshold qualitative judgment about what are to be counted as costs and as benefits may even be subject to debate. There will be effects, good or bad, for

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which quantification in dollar terms may seem irrational or unethical. For example, how valuable is a sunset?

But these measurement problems and issues of uncertainty, as insurmountable as they may seem, would be inherent in any rational decision-making process for environmental policy we might devise. To acknowledge that we will never establish with absolute precision a quantifiable value of all the consequences of a proposed action is not to render the effort to do so pointless. We may not know all, but we know much about measuring costs and benefits in terms of the medium that is the most common and fungible known to us—money. We enjoy a highly refined understanding of biophysical consequences, of technological costs, of physiological responses, of statistical estimation techniques, of consumer preferences, and of the monetary values attached to them. Computer models of breathtaking power and speed allow us to model and predict the behavior of extremely complex systems. It would be folly to ignore the body of information that would be produced by the concerted, rigorous, and objective application of these tools of analysis to environmental policy decisions. Indeed, our failure to employ these means of policy analysis for the past two thousand years is what has led us to this precarious point.

B

Having concluded that the science of assessing risk and quantifying and comparing the relative costs and benefits of environmental policy alternatives is a prudent framework for making the resource use decisions of our future, we must return to the question of how the Environment Agency must implement that approach. Clearly, for this method to provide any decision-making value, the technical analyses must be free of professional and political bias. We must be sure that our decisions are based on "good" science in the objective sense, not the subjective sense. Hence, as a threshold matter, it is incumbent on the agency to establish a framework and apparatus to conduct the requisite nonnormative, apolitical analysis according to accepted scientific methods.

The information produced by that arm of the agency, however, ultimately must be qualified and considered according to the level of uncertainty inherent in the process and by the complications of close policy calls. Some decisions will be easy, such as when one alternative course of action unquestionably presents vast benefits and few costs. But as this case illustrates, it will not always be so. One can foresee a situation, for example, in which the predicted benefits of one alternative are very large, but only narrowly outweigh the costs, whereas the costs of another alternative outweigh the benefits, but both the costs and benefits in the latter case are minuscule. Would it be better for society to choose the former alternative because its benefits outweigh the costs? No one can say ahead of time. If the degree of uncertainty is large in the cost-benefit quantifications, it may be foolish to pick the first alternative and risk the possibility that the quantification of benefits was overestimated and of cost was underestimated. Indeed, even if the risk of quantification error was small, as

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a matter of policy it may be undesirable to inflict large costs on society simply to gain marginally higher benefits. Ultimately, therefore, it is also incumbent on the agency to integrate the information derived from the norm-free quantification process into a decision-making framework that produces consistently sound policies.

The agency can accomplish these twin tasks only if we abide by the spirit of the Environment Act's broad delegation of regulatory authority to the agency and of the deference to agency decisions required of the courts under the Agency Procedure and Review Act. The courts must ensure that the risk assessment and cost-benefit analysis procedures are faithfully followed, and that the agency does not so depart from the most favorable predicted quantitative outcome among its policy choices—say, by choosing an alternative with costs significantly exceeding benefits, or failing to provide sound reasons for rejecting the most favorable cost-benefit alternative—as to be unreasonable. Beyond those questions the courts should not venture.

III

Having outlined the proper criterion and method for making our future environmental policy choices, we must exercise the judicial review function just discussed. Here, it is manifest that the Environment Agency considered a spectrum of options for dealing with the incompatible desires of Glaxon, Earth One, and Justice! as they represent competing options for how society as a whole might choose. Although the agency did not explicitly state its criterion for weighing each alternative, it is sufficiently apparent from the agency's order that risk assessment and cost-benefit analysis are inherent in the approach. The agency has, in effect, asked society to sacrifice twenty years of placidium in order to preserve the last known pristine environment on the planet, a trade-off that this Court is in no position to criticize. The mitigation measures imposed by the agency on Glaxon reflect a careful evaluation of the risks and consequences of the mining activity, as well as a balancing of costs and benefits felt by Glaxon, the environment, and the local residents. Indeed, with foresight the agency has asked Glaxon, in return for the privilege of mining the placidium, to finance research that will invest in our means of managing society's new and vastly more difficult future. Hence, although in subsequent cases the courts would be justified in asking more of the agency in terms of quantitative justification in the record for its policy decisions, I find no basis for concluding that a sound, rigorous cost-benefit analysis in this case would not have adequately supported the agency's decision.

In this regard, I am puzzled by the concerns and criticisms expressed by other Justices—all those, that is, except Justice Choonbrad, whose concerns with legislative delegation of power cause him to offer no solution at all—with respect to the agency's decision and my rationale for endorsing it. Justice Coasela, for example, objects that the agency has not produced a result we could expect to emanate from her conception of the so-called economic free market. To be sure, the market is an important

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source of quantitative information relevant to the cost-benefit analysis I endorse. However, the market alone cannot be relied upon to produce consistently sound policy decisions. If any social institution is susceptible to uncertainty and imperfect information, it is the market. Uncertainty about health risks might trigger precautionary responses in social policy that would not be produced through purely market forces. Quite simply, the market cannot be relied upon as the exclusive method of cost-benefit valuation, for many environmental amenities simply have no readily ascertainable marketable value. For example, collective goods, such as the air, cannot be traded in the market. Nor can the intrinsic value of, say, an endangered songbird readily be translated into values relevant to the market. The market is an important quantification tool, but is clumsy in some important applications of environmental policy decision making.

On the opposite side of the table is Justice Brandtlund, who objects that both the market and my cost-benefit method are too shortsighted to produce a sustainable society after placidium runs out. I confess that placidium has led our society to lose sight of the ecosystem dynamics that play a central role in Justice Brandtlund's conception of our policy future, but there is no reason that a fully equipped and rationally applied risk assessment and cost-benefit method cannot integrate ecological sustainability as a goal and plan for the long run in that regard. To make that our exclusive goal, however, would be to ignore the fruits of the information our risk assessment and cost-benefit analyses produce regarding other important social values.

Justices Ephsteid and Gaialis take the "free market" and "sustainable ecosystem" criteria, respectively, to mystical extremes. Justice Ephsteid wishes that environmental policy be constrained by notions of raw private property rights not recognized since ancient times, and would eviscerate government's role in policy choices to that of a bystander. Justice Gaialis, at the opposite extreme, would subjugate all social policy to an amorphous, quasi-religious environmental "ethic," and would install an envirostate to ensure we all worship in unison. I am confident that either of their approaches would consistently produce wide departures from rational policy results, and would give rise to ineffective and unmanageable institutions of government. In any event, to the extent members of society share the profoundly personal beliefs expressed by either of the two Justices, a well-designed cost-benefit analysis will reflect the breadth and depth of their value preferences through preference survey techniques that assist in quantifying nonmarketable values of that sort.

Finally, Justice Billarck presents a sweeping condemnation of the rest of the Court as amounting to mere pawns in a broader social policy of racial and economic oppression manifested, among other ways, through environmental policy. Yet the distributive justice concerns he expresses can easily be integrated into the framework I advocate. Indeed, I can conceive of no better way of exposing the social injustices that motivate Justice Billarck than to engage in the rigorous assessment of risks and quantification of costs and benefits underlying our policy alternatives, al-

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beit with a careful eye towards how the population-wide risks and aggregate social costs and benefits are meted out to various discrete subgroups.

In sum, risk assessment and cost-benefit analysis, applied as I have outlined, are the foundations of the only policy choice method which can bring to life all of the various and disparate concerns expressed by the other Justices, in a fully integrated manner that will allow reasoned, informed policy decisions. For those reasons, and because I find that the Environment Agency's order adequately reflects the outcome of such a method in the case of Glaxon's proposed mining operation, I would affirm in all respects the lower court's decision upholding the agency order.

MR. JUSTICE COASELA, *with whom* MS. JUSTICE SIMONE *joins, delivered the following opinion.*

If the sages were to be believed, the world would have ended countless times by now. Almost annually for as long as history has been recorded we have heard dire prognoses of the end of the environment. Of course, none of the doomsayers has borne true. Before placidium, other technological advances rendered those predictions nonsensical every time bar none. Since placidium's discovery, its remarkable qualities have played the major role in that continuing tale. What will happen now that placidium appears sure to run out? The answer is right before our noses: the same forces that led to technological advances in ancient times, and the same forces that led to the proliferation of placidium's uses, will emerge again to lead us to the solution. Fortunately, we need invest nothing to tap into those forces, we need not search them out, we need not create government bureaucracies to make them work in our favor, for they are the forces of the most time-tested institution of resource allocation ever devised—the market.

When left to operate freely, the simple laws of supply and demand, profit seeking, and marginal returns will work tirelessly, and at no cost to society, to organize socioeconomic behavior in ways that solve problems of resource scarcity and depletion with flawless efficiency. For two millennia we have avoided problems of the environment precisely because the mining, manufacture, distribution, and use of placidium have been orchestrated not by some bureaucrat toting up Chief Justice Cosben's ethereal costs and benefits, but by the largely invisible, highly decentralized, always efficient marketplace. When crops were devastated by worldwide fungal invasions, society's undiminished demand for food vastly outstripped the supply. The profit motive, not political will, focused the energy of technological innovation on meeting that demand, and new technologies using placidium were born. Perhaps placidium has atrophied our sensitivity to resource scarcity, but it has not done the same to the market, which, fortunately, continues to enjoy a central role in our otherwise highly regulated society. If we turn to that institution as we have countless times before, I am confident that the demise of placidium supplies will not spell the demise of civilization.

I must acknowledge, however, that it is possible there will not be new substitute technologies for all of placidium's uses discovered in time to

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avoid social dislocation at some scale. Environmental despoliation and degradation thus may return to haunt us as very real possibilities in some contexts. Yet problems of the environment are no more than problems of the market. In other words, when obstacles confront free exercise of the market, among the consequences may be pollution, overexploitation of resources, and other economic maladaptations leading to environmental degradation and threats to human health. We do not need to reexamine our morals to solve such problems, but rather need simply to keep track of the overarching goal of maximizing social utility through the free market. When that goal is met, everything else falls into its proper place.

To work effectively as a tool of policy making that will overcome obstacles to that goal, the market requires several conditions which are not always present in society, particularly a society in which the government has worked assiduously, albeit with good intentions, to regulate social conditions in ways that pose barriers to freedom of economic pursuits. First, the goods and services traded in the market must be as close as possible to fully defined and enforceable individual property rights. When those rights are amorphous or undefined, such as with goods held in common, valuation and trading in the market are complicated. Second, the persons trading in the market must have as near to perfect information about the goods and services being traded as possible, so that their individually hedonistic decisions designed to maximize utility can be rationally made. Finally, there must not be significant barriers to the trading action of the market, lest the transactions cost to individual traders become so high as to prevent them from trading when they otherwise would. These conditions are the watchguards of economic efficiency in the market, and thus of rational environmental policy as well.

Indeed, it is difficult to conceive of how environmental problems would arise were these conditions consistently met. No individual owning a resource would allow it to be depleted or wasted in an economically irrational manner, hence, the problems of overexploitation of commonly owned goods would not emerge. And no manufacturer could ignore the pollution consequences of the production of goods and thus overproduce, as the owners of the injured property would seek damages and simply return the costs of pollution to the polluter, who would curtail production in response. Moreover, after that market adjustment was made, if the owners of the injured property valued the pristine state of their property more than the manufacturer valued production of the goods, they would simply pay the manufacturer to reduce production (or invest more in pollution control) until an equilibrium satisfactory to all concerned was reached. This is the market in efficient operation, and there is no reason why it cannot work on behalf of the environment in these ways.

Seen from this perspective, one must agree that pollution is not an immoral act, but rather an economically rational response made in the context of an imperfectly designed market. Accordingly, it is incumbent on the Environment Agency not to interfere with the market as a tool of environmental policy, but rather to facilitate the conditions just discussed. For example, where goods are difficult to reduce to private property

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rights, such as is the case with air, the agency can act to simulate that market condition, perhaps by auctioning air pollution rights. And the agency must work tirelessly to provide information about environmental conditions to the public, so that relevant data may be integrated into all persons' market decisions. Finally, the agency must provide an open, accessible forum for the bargaining that must occur for market forces to shape environmental behavior, perhaps by providing nuisance remedies and by facilitating community organizations. The last thing the agency should do, however, is to let the hysteria associated with the now finite supply of placidium prompt it to displace the market in the name of the environment.

It is appalling to me, therefore, that other members of this Court would stifle or altogether abandon the market for their various concoctions of policy making. The Chief Justice claims that her program of converting meticulously calibrated risk assessment and cost-benefit analyses into regulatory decrees has the valuation mechanism of the market at its core, but one assuredly will never see that deep through the layers of bureaucracy and dense regulatory script that are certain to envelop and smother the dynamic forces of the market. I shudder to think of the manipulations of reality the cadres of scientists and economists will carry out to estimate risks and invent shadow-like values for items for which they deem the market has not adequately accounted. The regulatory abuse of the market that will follow as those fictions are translated into policy decisions will impose tremendous dislocations of rational economic behavior. And the carrying cost to society of the cost-benefit evaluation process and its regulatory implementation will not be insignificant. The beauty of the market is that it requires no centralized government infrastructure to identify, weigh, and compare costs and benefits. The market works for free, values only that which has value, does so accurately and efficiently, and needs no one to operate it.

Justices Brandtlund and Gaialis, whose outlines of centrally planned enviro-economies differ only in matter of degree, would steer the market right out of existence. Justice Brandtlund's vision of sustainable development overlooks the fact that, through the free market, society has sustained a vibrant economy and healthful standard of living for thousands of years. He offers no convincing reason for eschewing that tradition, or for believing that the Environment Agency can devise a master plan that will work better for as long as the market has. Justice Gaialis is at least open about her desire to drop all pretense of fostering economic well-being, placing environmental preservation in an exalted position of policy dominance. She is less than open, notwithstanding her lip service to a new age of local authority, about the inevitable reality that her approach would mean giving *carte blanche* to the Environment Agency to plan all facets of our lives: birth control, diet, clothing materials, consumer choices, work habits, energy use, housing, recreation. No aspect of our day-to-day living could be left to anything less than total predesign by an omnipotent central authority. The problem is that in politics, omnipotence without omnis-

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cience is a recipe for totalitarianism. Even with placidium running out, I do not think we are ready for that yet.

Although I share Justice Ephsteid's reverence for private property as an organizing principle for environmental policy, I cannot subscribe to her demand for the exit of government as an essential feature of that prescription. To be sure, fully defined and enforceable private property rights are a necessary component of a fully operative market system, and government intervention in the market can spell disaster in that regard. However, Justice Ephsteid appears to believe both that government is the market's only enemy and that government can be an enemy only. History has shown, however, that prudent, restrained, well-planned government action can close imperfections in the market, such as poorly defined property rights and inadequate dissemination of market information, and that without such limited intervention some private market participants may prey on market imperfections to their unfair advantage. Hence, by no means do I believe that adopting a market-based approach to environmental policy is tantamount to issuing a pink slip to the government.

Lastly, when one peels away the surface of his diatribe on environmental equity, Justice Billarck weighs in with a theme that does not appear to be predisposed to any view of environmental policy so much as it is motivated by his unstated anathema for the market-based approach I advocate. It is true that the market itself is blind to income, race, and ethnicity, and thus doles out its rewards without an eye to those factors of social importance. It is inevitable, moreover, that not everyone will fare equally in the market. Justice Billarck's concern with these conditions is that, as it appears to him, persons of low income, minority race, or minority ethnicity are too often at the end of the receiving line in the market, and that this general phenomenon has manifested itself in ways including exposure to disproportionately degraded environmental conditions.

Even if this state of affairs is true as a statistical matter, it is not the fault of the market, nor is the solution to eviscerate the market as a means of overcoming social prejudices that are the root cause of the problem if there is one. The market will not prevent a racist from acting in an economically irrational manner; however, the solution is to get rid of racism, not to get rid of the market. We do so through civil rights laws, public education, and, most important, through consumer pressure in the market. The market also cannot be responsible for prejudicial government policies that, in Justice Billarck's view, promote environmental inequity. Thus, tinkering with the market cannot provide the solution there either. We address those sources of state-imposed disparity, if they exist, by vigilantly maintaining open and democratic political institutions. At least with the market in place and government operating transparently, we will know that any resulting disparities of environmental conditions are borne of real differences in ability, not by prejudicially driven differences in opportunity. In the end, however, not every square inch of our nation can be maintained to the same level of environmental quality. To the extent consumers value higher environmental quality settings, it is inevitable that those with more resources will locate in the areas with the better environmental sur-

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roundings. To construct an environmental policy that precludes that result would require nothing less than dismantling our market system.

With the foregoing in mind, I am led to find certain aspects of the Environment Agency's order in Glaxon's case troubling. Clearly, the agency's intervention in the case was unprecedented in the history of placidium mining, signaling a departure from what heretofore has been mostly a market-driven industry. We know that the market for placidium would support Glaxon mining the cave for the full fifty-year supply of ore, and that Glaxon owns the whole cave and everything in it. Neither Earth One nor the Environment Agency offered to buy out Glaxon's interest in the one-quarter of the cave the agency has ordered to be set aside, or to finance relocation of the species in the remainder of the cave, and thus I would strike those requirements as failing to reflect a fair market outcome for Glaxon. The ten percent levy on Glaxon appears to be a way for the agency to blackmail Glaxon into financing public research on placidium substitutes, whereas it is by no means Glaxon's fault that such research is needed. As it is highly probable that Glaxon or others in a free-market atmosphere would engage in such research simply as a consequence of their profit motives, I would strike that condition of the order as well. By contrast, it is plausible that the relocation and medical monitoring payments the agency has ordered Glaxon to make to local residents is a way of simulating damages remedies that force Glaxon to account for the full costs of its pollution-causing actions. Although I would prefer to have had that matter settled through an evidentiary hearing focusing on the cause and effect of proven injuries to the residents, I am content to let that portion of the order stand. Overall, therefore, the agency's order is a far cry from where one would reasonably expect the market to lead us for the future, and I can only hope that the Environment Agency and this Court soon rediscover the merits of that institution before the shortage of placidium presents very real and, perhaps, irreversible suffering.

MR. JUSTICE BRANDTLUND, *with whom* MS. JUSTICE PREKAUSIAN *joins, delivered the following opinion.*

Placidium has bought us time, but time is up. We are now faced with what was an inevitable realization—that our planet must be treated as a closed system, the sustainability of which depends on our every action. We have delayed this day for over two millennia through the panacea of placidium, and in the process have engaged in actions of such tremendously shortsighted vision that we now must ask in all seriousness whether the next generation will survive. How this has come to be is no mystery, or should not be to anyone who pauses even for a moment to consider what the so-called wonder of placidium has meant for the environment.

Simply put, placidium has driven a wedge between the human condition and the natural environment surrounding us. We have replaced the environment with placidium as the barometer of our quality of life, thus opening the door to technology's perverse, insidious erosion of the environment. Placidium has been trumpeted as always saving the day: a

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source of food when crops are ravaged, a means of neutralizing pollution from some new manufacturing process, a source of building materials to substitute for wood and metal. Yet in so doing, placidium has completely warped our conception of what the environment is here to do. With placidium, we have come to view the environment as a fungible raw input for our highly industrialized society, like just another chunk of metal. Viewed that way, why would we not base resource use, pollution control, and other environmental policy decisions on the short-term consequences? After all, when one ore, or a source of water, or a source of energy, or some other natural resource runs out, and when humans and the environment are exposed to new toxins and pollutants, we can turn to placidium to "save the day" and allow us to pass our seemingly limitless, risk-free quality of life along to our progeny. But having lulled us into this false sense of timeless security, placidium now emerges as the grim reaper. If we have no placidium to give to our progeny, what *will* we give them? At our current pace of consumption, within a generation we will have no crops, no ores, no timber, no potable water, no fish to consume—we will have nothing, nothing to show for two millennia of so-called progress.

We have no choice but to radically alter our conception of resource management and environmental protection if we are to have any hope that it is not too late. We must accept responsibility as the stewards of our planet and all its natural and biological richness. We must accept responsibility for giving future generations the same or a better chance to steward that diverse environment. We must accept responsibility as being part of the interconnectedness of every ecosystem—from as big as an ocean to as small as a puddle—that makes up what we call our planet. Truly, however, even with the benefit of placidium we know very little about how to bear these responsibilities. This is why every decision we make henceforth must be made with extreme caution, with care for what consequences to human health and the environment might be ten, one hundred, even one thousand years hence, and with care for the dynamic complexity of the ecosystems affected by our every move. We must appreciate that what appears to us as even the smallest of mistakes today may turn into an environmental disaster in a decade, and we will have no placidium left to save the day. Stewardship for sustainability thus must be the Environment Agency's guiding principle in all that it does, and we should fill the agency's toolbox with every device imaginable to let it fulfill that mission. If it takes telling consumers they can no longer use environmentally damaging products, or restricting a property owner's destruction of precious resources, or charging fees to manufacturers for their pollution, then so be it.

Of course, the sustainability I imagine is one also of economic prosperity. We should not lose track of the objective here—to continue, even to improve upon, the quality of life as a whole. We must have a growing economy that provides equitable opportunities for a safe and secure life for current and future generations. I suspect that history would show that the poorest nations economically have also had the poorest environmental

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protection records, as abject poverty seldom leads citizens to support strong environmental policies or allows government to afford such a program. A robust economy helps to counter those effects, thus accruing benefits to the environment as an indirect result of improving the human economic condition. Hence, whereas the goals of protecting the environment and promoting economic and social development often have been portrayed as incompatible, they are in fact mutually reinforcing.

We also must not subjugate basic civil liberties to some notion of a higher socio-environmental purpose. Government must preserve fundamental human rights to shelter, food, and land as the base means of sustenance, and must act in partnership with private interests, rather than as their enemy. A strong regulatory arm is needed to set the course, but our fundamental democratic ideals must not be cast adrift.

Thus stewardship and sustainability are questions of balance, but of balance for the long term, not the short term, and of balance reached with great caution for its dynamic fragility, not with haste and risk for what we gamble of it today. The world we hand to our progeny must be one in which the exploitation of resources, the direction of investments, and the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations.

I am saddened that I find no sense of this balanced stewardship in my fellow Justices' outlines of environmental policy for the future. Chief Justice Cosben's utilitarian approach, it seems to me, places too much emphasis on sterile assessments of risk and macroanalyses of costs and benefits. While these are important tools of environmental policy, their reliability decreases as the scope of analysis moves outward on the time line. When I speak of a sustainable balance of environment and economy, I mean for perpetuity. The results of risk assessment and cost-benefit analysis are useful to that purpose only if we craft an overarching policy framework that is sufficiently flexible, adaptive, and integrative to shape decisions in the midst of uncertainty, with the understanding that we may need to buy precautionary insurance against future health and environmental calamities by putting aside the cost-benefit data from time to time.

At least Chief Justice Cosben recognizes the need to consider intergenerational contexts in her approach, which is more than can be said for Justice Coasela. His belief that the market is our way out of the placidium shortage thoroughly misses the gravity of the predicament in which we have put ourselves. For the past two millennia the market has worked relentlessly every step of the way towards our current condition. Each time an issue of resource scarcity has been presented, the market has led us to act economically rationally, as Justice Coasela would put it, but environmentally suicidal. If placidium allowed the last tree to be cut down for a profit, or the last river to be polluted without economic loss, we would do so without regard to whether that decision would make life physically, economically, or environmentally more difficult for a future generation. True, we haven't had to pay for the market to operate, but we will pay for the consequences of its operation. How many of us will be

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comforted, when the last gasp of fresh air on the planet is inhaled, to know that we preserved the market instead of our health and environment?

As for Justice Ephsteid, the folly of her primitive conception of property and law is self-evident. What, besides sheer ignorance, would lead anyone to believe that in a constantly changing social and physical world, where only adaptive, evolving systems are sustainable, the institutions of private property and federalist government structure must remain fixed in the positions in which they were found in ancient times? Far from being a static principle of Justice Ephsteid's fictional natural law, the legal dimensions of private property have always been created by, subservient to, and evolving with the public good as regulated by the state. There is not a single facet of our society or our environment that even resembles its condition of a thousand years ago, yet Justice Ephsteid clings to these vestiges of bygone eras as some form of immovable life forces without which we will perish. I posit that the opposite is true—that the entrenchment of broad private property rights and their immunity from reasonable government planning and regulation is the quickest way to worsen our condition that anyone could devise. What incentive will property owners such as Glaxon have in that world to give even the slightest consideration to the environmental consequences of their actions, much less how those consequences might play out in future generations?

To be fair, I can understand why so many in our society share Justice Ephsteid's views when I listen to Justice Gaialis's mantra-like invocation of her deeply ecological values. The only way we could fulfill her vision of a monolithic environmental ethic is to be positively unethical to humans, and that is not part of a sustainable society in my view. Granted, we may need to take many measures that place the environment at the forefront of policy at the expense of property, and our consumer and reproductive behavior will have to yield to the long-term goals we set. It will take a concerted regulatory framework to be able to reshape society towards those ends, but that program must be carried out in the context of the democratic political institutions and with respect for civil liberties that make our society as rich as does our environment. Humans are not the only concern for sustainable development, but they must be at the center.

Indeed, Justice Billarck and I seem to be closest in this regard, as I share with him a concern for the equity of our environmental policies. But I cannot share his intensity of focus on the elimination of any and all disparities as our central policy goal. We must all recognize that we are soon entering an era of intense scarcity of resources. Sacrifice and suffering unimaginable in our placidium days will become commonplace, and our standard of living on average will plummet. Although we cannot countenance inequity borne of prejudice in that regard, we will have to be prepared for a lowering of expectations for all. I do not look forward to that world, but I prefer it to no world at all.

Accordingly, albeit for reasons much different than my fellow Justices, I would affirm the Environment Agency's order in all respects. With basic human welfare in mind, the agency has established a thirty-year we-

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aning period to get us off of the placidium habit, which should be ample transition time to install a policy framework for sustainable development in postplacidium society. The agency's decision to reserve part of the cave for its pristine ecological conditions and as a safe harbor for all of the cave's species, on the other hand, ensures that we will have the benefit of that ecological treasure for perpetuity. Although that resource may not have useful value to us today, no one can say that one of the creatures living within or moved to the preserved cave space will not hold the solution to some future disease or other challenge we will face when placidium runs dry. Placidium, after all, was just another spore until its uses were discovered. Why should Glaxon have the right unilaterally to snuff out those species simply because our legal system recognizes a property interest in the cave? Indeed, it is also fitting, given that Glaxon wishes to exploit the last of placidium, to require Glaxon to help society plan for the future through the research funding required by the agency's order. Last, the agency wisely has considered the rights of the local residents, finding that the need to mine the placidium for society's sake imposes a social duty to ensure the well-being of the residents. Society will spread that cost to the greater number when Glaxon passes on its relocation and medical monitoring costs through its prices for placidium. Overall, none of these measures deprives Glaxon of a profitable venture; combined, however, they offer a vision of the sort of balanced long term vision of sustainable development I can only hope we adopt as a general rule for our future environmental policy.

Ms. Justice Ephsteid *delivered the following opinion.*

In fifty years, thirty if the Environment Agency has its way, the world will no longer be a friendly place in which to live. When that day comes, I suspect that regardless of what this Court or the Environment Agency does today, society will rediscover two simple principles that guided the birth of democracy in ancient times: property rights and limited government. Each of the other Justices is deluded in thinking that their respective policy frameworks actually will avoid or solve the resource crisis that awaits us. My concern is focused more directly on the form of society we will need in order to maintain civil liberty and democracy, without which abundant resources and pristine environmental settings are worth very little to the human condition.

History will yield few examples of democratic societies that were not based on strong enforcement of private property rights. The free ability to acquire, use, and transfer property, and the ability to have government there to protect those rights and do little else, has been an essential condition before any society has fulfilled its democratic aspirations. These conditions are thus derived from natural law, not as gratuities from the state. I am unconvinced, therefore, that the environmental woes of postplacidium society will be ameliorated by replacing the natural institution of private property with the public property mentality of an enviro-state.

Indeed, very few of the resource losses to which the other Justices point as evidence of placidium's lethal effect on society can be blamed on

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the institution of private property. Rather, the public sector and environmentalist organizations simply failed to act with regard to the environment as if they had a proprietary interest in it. Before the last forests of the Western Hemisphere were removed for timber, did any governmental entity or environmental group offer to purchase the lands so as to put them to other uses, such as preservation or managed development? No. Instead, gradually but unmistakably, and at the relentless prodding of the elitist preservationist intelligentsia, government has eroded private property rights through countless measures of environmental regulation, to the point at which the government and environmental preservation groups can have their candy for free, with no regard for the constitutional requirement of compensation for public appropriation of private property. NEW CONST. art. IV, § 2. Although many deny that the so-called public good has thus overexploited private property, this death by a thousand nicks at the hands of regulatory sloth and self-indulgence has rendered private property almost unrecognizable compared to its original form. But it is not altogether lost. What remains of private property should, in my opinion, be returned in full to its owners, unshackled from its regulatory chains, so that the owners can manage their resources according to private, democratically instilled interests.

It is not as if the Environment Agency would have no purpose under that program. Government must provide a forum for protection of private property, such as through nuisance claims, and protection against threats to the public health, as is possible if toxic wastes are not properly handled. And the government must manage its own affairs and our relations with other nations. All of those functions require public governmental infrastructure, but they do not require the regulatory behemoth into which our state has grown. Hence, in the absence of a nuisance or public health threat, public law is not required to address environmental issues and should not venture there. If it does, it should pay its way. And even when regulation is carefully tailored to respond to nuisance or health issues, the exactions and restrictions it imposes must be proportional to the problem it addresses, or else, again, it must pay for the excess. These are not undue demands on government, even with—indeed, especially with—placidium running out.

Sadly, the other Justices on the Court appear so addicted to the administrative state they cannot conceive of a future without yet more governmental intervention in the lives of citizens under the flag of environmental crisis. Chief Justice Cosben's cost-benefit state is but the paradigm of a centralized bureaucracy with unlimited regulatory power to micromanage property interests. Her approach will not get us off the road we have been traveling—the road that has led us to this juncture. Although I applaud Justice Coasela's vision of a free market, his tolerance for government intervention to "correct" what we decide are "imperfections" in the free market is little more than a disguised love affair with administrative power. Both of these approaches, I am sure, have a certain appeal to persons who have blind faith that government will act reasonably, yet history has shown that the public appetite for private property is

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unquenchable. Private property is the creation neither of the government nor of the market; it is synonymous with law itself and is a natural prerequisite to any true legal order.

As for Justices Brandtlund and Gaialis, it is their antidemocratic premises that chill my veins. Justice Brandtlund would have present generations order their affairs for the benefit of unnamed, unborn future individuals. Paradoxically, if we were to change present behavior with future individuals in mind, we would alter the course of time and thus produce entirely different individuals. In his view, to whom do we owe our duty, the first set of possible individuals or the other? In any event, the further evolution towards a centralized state implicit within Justice Brandtlund's view, perhaps to one of even global proportions, would be inescapable under his sustainable development vision. And although Justice Gaialis claims her environmental ethics police will operate at the local level, it is really a new world religion she has in mind. I am content, however, with the Judeo-Christian ethic our state has used as its guiding light for millennia, as it is closely associated with respect for the private property rights and individualism necessary for fully empowered democracy.

Although his concern is with empowerment as well, Justice Billarck, I am afraid, seems not to have understood the issue in this case. Most of the conditions that motivate Justice Billarck's opinion, I believe, are associated with the erosion of democratic institutions in society as a result of burgeoning governmental intervention in day to day life. To the extent environmental inequities might be present, therefore, they are simply manifestations of the inept regulatory state engaged in misguided social engineering. These inequities will correct themselves when principles of private property and limited government are restored as the foundations of our social institutions. But the issue in this case is simply one of which resource management framework to adopt, a question to which private property and limited government are well suited in response, but for which Justice Billarck's social equity design seems inapposite. We will have to wait for another case to hash out his distributional ideals.

Based on these considerations, therefore, I would overrule the Environment Agency's order in all respects as addressing matters that are simply outside its scope of jurisdiction. As a threshold matter, what Glaxon has planned has not been proven to pose a nuisance to any other property owner, or a public health threat in general, and thus is a matter purely within the exercise of its private property rights. In the absence of clear and express delegation by the Legislature, I am not convinced the Environment Act authorizes the Environment Agency to act in that context, and thus Glaxon should not need the approval of the Environment Agency to mine any placidium.

Even assuming, however, that the Environment Act gives the agency legal authority to restrict the mining in the absence of proof of a nuisance or health threat, which the majority of the Court appears impliedly to conclude, unless the Environment Agency is prepared to compensate Glaxon fully for the value of any placidium placed off limits to Glaxon, the agency's authority cannot be constitutionally exercised. No element of the

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agency's order satisfies this basic legal principle: the cave set aside and species relocation orders intrude on Glaxon's interests without compensation, the award to local residents is not based on any finding of nuisance, and the research funding tax is a bald exaction with no proportionality to any transgression by Glaxon. The decision of the Intermediate Court should, therefore, be reversed in so far as it restricts Glaxon from mining any of the placidium by direct prohibition or unreasonable conditions.

Ms. JUSTICE GAIALIS *delivered the following opinion.*

Thanks to placidium, when it comes to questions of the environment, we have lost our ethical and spiritual compass, and now we may lose our very existence. I am no less than ridiculed by the other Justices of this Court for even suggesting that there are ethical and spiritual dimensions to environmental policy that should guide our legal decision today, but it is they who, by writing environmental ethics out of the picture, worship false gods. Whether it is cost-benefit science, or the market, or property rights, or sustainable development, or social equity, each Justice has his or her pet rationalist program for environmental policy, and each has forgotten that rationalism does not set the bounds and limits of the environment. Therefore, not only are their respective starting points misguided, but so too are their very world views.

I am not out of touch with our practical task at hand—to decide a question of legal policy for management of the environment. But we confront questions of environmental law because we perceive problems of environmental degradation. What causes those problems? Simply, the production and consumption patterns of our society, which in turn are shaped by broad sociological and demographic factors such as population, technology, economy, and politics. Our social structure defines the fabric of those conditions, but ultimately that social structure is shaped by the deeply rooted ethics of the society. Any law that is out of touch with those ethical foundations is doomed to failure, hence our question today is as much one of ethics as it is of law. More accurately, we are confronted by the need to rediscover our ethics of the environment, for placidium has allowed us for two millennia to dispense with the need to have any such ethics whatsoever.

I appreciate that no one likes to hear that their ethics are lacking in essential respects, and thus I am not surprised to find defensiveness in other members of the Court. But we have no luxury of clinging to rationalistic creeds of the past. Few would deny that, at our core, we are creatures of ethics, so why does anyone deny that we are also creatures of the environment in need of an ethical world view consistent with that reality? Even when placidium was abundant, there was no debate that we owed an ethical duty directly to each other—a duty that required us to avoid threatening human welfare through environmental harms. That is why we took full advantage of placidium—to reduce or, often, eliminate the detrimental environmental effects of our behavior. I presume that this ethical premise will not perish, but could it be a workable premise for postplacidium soci-

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ety to deny that we also owe ethical duties directly to *the environment*? I think not.

All I propose, therefore, is that we stake our future on a new premise—that environmental problems are ethical problems. Much to the contrary of the criticisms of my fellow Justices, the Environment Agency need not become a totalitarian mind control regime in order to fulfill this vision. Rather, because ethical transformation is happening at the level of the individual citizen, I foresee and would encourage a rapid and broad decentralization of legal authority, so that people can make decisions about their immediate environs that are consistent with their environmental ethics. I predict that when we invest that power in the citizens, it will not take long for them to rediscover the ethical dimension of this question and build moral tools as impressive as our technological ones. When that day arrives, we will ask of the Environment Agency only that they facilitate that political process and keep our national government honest to the same biocentric ethic.

The other Justices are almost painstaking in their efforts to hide from that beginning point. Justice Cosben's science of cost-benefit analysis, Justice Coasela's devotion to the free market, and Justice Ephsteid's worship of private property and limited government are manifestations of rationalist, positivist world views that are simply misfit to the challenges of the future. They would require very little of society besides maximizing human wealth and pleasure, no matter how much at the expense of the environment. At the extreme in this regard is Justice Ephsteid, who criticizes me for bringing environmental ethics into the picture; yet she employs nothing less than a different set of ethics in her deluded call for the restoration of a society of gentlemen farmers and pluralistic town meetings to overcome the widespread environmental degradation of post-placidium society. These Justices and I simply do not speak the same language, and I have little doubt that theirs will soon be the lost tongues.

Ironically, I am more concerned by the opinion of Justice Brandtlund than I am by the three ideologues. At one time he acknowledged the ethical dimension of environmental policy in terms consistent with my approach, *see Rivers Council v. Watth*, 547 N.72d 94 (4301), but he since has diluted those views in a futile attempt to strike what he naively calls the balance between environment and economy. I fear he has deceived himself, and that the apparent reasonableness of his seemingly evenhanded approach will deceive others as well. The slogan of sustainable development will ring hollow without drastic reorientations of our population and consumption patterns that will not permit much of Justice Brandtlund's balancing act. That reality more than any other should convince us that we are not, to use his words, stewards of the planet. The premise of human superiority over all other living beings and all nonliving resources is outdated and deluded, and can no longer be used as a cover for what are nothing less than immoral acts that serve only to sustain a bloated human race. The environment is not our possession, our chattel, our garden to sow, or a even gift from some greater being. We are part of it—a mere appendage of the larger organism—and it is far bigger than we will ever

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be. If it perishes, so do we. Hence, we cannot afford to balance any socioeconomic objective against the duty we hold to the environment and all other living beings as their equals.

Indeed, not even Justice Billarck's theme of environmental equity dissuades me from that view. Of course, there is no room for prejudice and inequity in environmental policy, but I cannot countenance any subjugation of environmental protection in the name of sociological agendas and politics. I could not, for example, approve of placing a landfill in an environmentally sensitive location simply to ensure that environmental harms are evenly felt in the human population. I suspect Justice Billarck is not advocating that extreme view, but I find it necessary to clarify the distinction between our approaches so as to make it clear that my starting point is fundamentally one of environmental ethics, not sociopolitical ethics.

For the foregoing reasons, I find fault with the Environment Agency's order only with respect to the granting of permission to Glaxon to mine so large a portion of the cave. I do not believe we need, much less deserve, thirty more years of placidium, and our ethical duty to respect the inherent and intrinsic values of the placidium spores and the other species living in the cave—indeed, of the cave itself—outweigh any antiquated notion of property interest Glaxon might assert. I would remand that portion of the order to the agency in order to require Glaxon and the agency to establish the compelling need to mine *any* placidium, a need that could only exist if the entire planet, not just its human appendage, would be put at risk. To the extent any such need is established sufficiently to warrant jettisoning our ethical compass once again, then I would fully endorse the agency's approach with respect to the conditions placed on Glaxon for the privilege of using the environment for human indulgence.

MR. JUSTICE BILLARCK *delivered the following opinion.*

How much longer will this Court and our other institutions of government pay lip service to distributional equity, while allowing racial and economic oppression to seep into every crevice of society including, as we see in this case, environmental policy? Several of my colleagues are quick to ask whether the Environment Agency has served economic interests; the others ask whether the agency has served environmental interests. It is only when they are satisfied with the outcome on those fronts, however, that they would turn to the question of the local residents. Their approaches, I fear, turn the issue on its head.

The one accomplishment placidium cannot claim is the elimination of economic, racial, and ethical prejudice in our society. Indeed, as the evidence Justice! presented to the Environment Agency amply demonstrated, placidium has become a tool of such prejudice, as the poor, predominantly minority communities around placidium mines have been left for millennia to deal with environmental ravages. I am glad to find myself in the majority in reversing that tragic history by approving of the Environment Agency's award of relocation and medical monitoring costs to the community around Whetmore Cave, but I am disturbed by some of the other Justices' reasons. Justice Coasela, for example, reaches that result only

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because to him the award approximates what could be expected under a nuisance remedy. Chief Justice Cosben concludes, with unstated mathematics, that the award reflects a credible risk assessment and strikes a reasonable balance of costs and benefits. Apparently, however, neither Justice would ask whether the award is necessary simply as a matter of social equity.

I realize, as Justice Ephsteid points out, that this case requires us only to decide a framework for environmental policy, but that framework cannot be separated from the broader social fabric. To the extent economic, racial, and ethnic prejudice and oppression run deep in our society—and they surely do—we cannot escape their manifestations in all facets of policy. Hence, unless this Court is willing to turn away from the oppressed communities of poor, of people of color, and of ethnic minorities, it cannot ignore social equity issues even in this case of environmental policy making. Environmental equity is but one head of the ugly monster of discrimination in this nation.

With that premise in mind, we must turn to the Environment Agency as the vanguard of environmental equity. Its policies must be designed not merely to facilitate environmental protection or economic development, but to do so equitably and with distributional concerns in mind. All peoples are entitled to equality of environmental benefits, and environmental harms must not be allowed to concentrate in oppressed populations. The agency must ensure that the politically powerless and the economically disadvantaged have a voice in the process, for if they do not, they will be oppressed even more. No decision of environmental policy, no matter how justified by costs and benefits, or efficient in the market, or respectful of private property, or sensitive to future generations and the ethics of the environment, should be allowed to proceed until we ensure that it is not a mechanism for worsening the condition of the oppressed.

The other Justices truly do just pay lip service to that principle. It is no excuse that social and political institutions of the economy ostensibly are color and income blind, as Chief Justice Cosben claims of risk assessment and cost-benefit analysis and Justice Coasela claims of the market, for as it works out that means simply that such institutions will not stand in the way of prejudice or do anything about its insidious consequences. A wealthy corporation does not need to have prejudice in mind when it muscles its way through government bureaus to get its permit to pollute, but the effect of that happening time and again, eventually, is to leave those without the means to make themselves heard yet further marginalized. The aggregate economic progress, which a devout capitalist society promises its people all too often, is distributed in ways that bear no relation to who bears the costs. I surely do not propose that we abandon those institutions, but merely that we instill in them the purpose of equitable social outcomes.

Indeed, contrary to Justice Ephsteid's baseless fears, I do not advocate erosion of private property rights, so long as they are exercised in a political framework that prevents oppression, environmental or otherwise. I do not believe, however, that such a framework will come about through

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reduced government involvement in social issues. Social policy is precisely where government needs to be pointed, the Environment Agency included. Democracy and big government are not mutually exclusive; democracy and prejudice are.

I worry more, perhaps, about where Justices Brandtlund and Gaialis would lead us by placing the environment so high on a pedestal that it may cause us to overlook these deep social problems as much as worship of the economy has. Do not mistake me, I place environmental protection in high priority, but I am concerned that Justice Brandtlund's sustainable development framework, as vague and amorphous as it is, would eventually turn into an excuse to put environment above all else. Justice Gaialis has evidenced that predisposition already, in her criticism of the agency's order allowing Glaxon to access part of the cave. How could it help the equitable distribution of resources in this nation to deny society all of whatever placidium is left?

The challenge, of course, is in ensuring that the rewards reaped and costs imposed by the extraction of that placidium are equitably distributed, and I am moderately pleased with the agency's result in that regard. Clearly, we need access to the placidium in order to maintain social equity for the next thirty years. I would reverse the agency to the extent the order precludes gaining access to the cave beyond that time, as we cannot say where we will be thirty years hence. In the interim, however, relocation of the species to the temporarily preserved cave space is not an unreasonable objective for environmental policy. Similarly, the requirement of the research funding ensures that society will begin the process of searching for new sources of economic productivity and environmental protection, the cost of which rightfully should fall on the beneficiary of placidium profits.

The central concern of mine, of course, is the relocation and medical monitoring award. Simply by virtue of the poor record of placidium mines in the past, there is more than ample evidence in the record to support such assistance to the local community. Although I cannot say on this record how much further the agency should have gone than that, it strikes me that further would have been in order. As the price of ripping apart this oppressed community's culture and way of life, would it be too much to ask that Glaxon share its profits with the residents rather than just buy them off? I would like to believe the Environment Agency can think that progressively in the future. For the present, however, I would affirm this element of the agency's order.

MR. JUSTICE CHOONBRAD *delivered the following opinion.*

My colleagues offer an array of interesting perspectives, from Druid to Neanderthal and everything in between, for how to solve our placidium dilemma. What none has endeavored to ask, however, is why this monumental decision has been left to the Environment Agency and, ultimately, the courts. In my view, the very fact that this matter has progressed to this point without one utterance of direction from the Legislature is proof posi-

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tive that the Environment Act constitutes an unconstitutional delegation of legislative authority from the Legislature to the Environment Agency.

It is difficult to imagine a more extreme example of the Legislature abdicating its central role as the decision maker in cases of tough political choices. Chief Justice Cosben is alone among the other Justices in acknowledging that the question of legislative delegation is even one for review, concluding summarily that the Environment Act's direction that the agency regulate in the "most appropriate" manner using the "most appropriate" standards somehow provides meaningful guidance to the agency in its execution of the statute and to the courts in review thereof. But these are legislative mirages, giving the appearance that the Legislature has reached a solution to the political challenge but providing no direction at all to the other branches of government as to what decision the Legislature has made. The six divergent opinions of my colleagues evidence that what is the "most appropriate" regulatory solution in this case depends on the beholder. Like it or not, when that is the case the beholder must be the Legislature, as the elected arm of the people, not some faceless bureaucracy or insular judicial court.

Accordingly, without offering the slightest indication of what I believe is the "most appropriate" solution to Glaxon's case, I would find the Environment Act an unconstitutionally excessive delegation of legislative authority and vacate the decisions of the Environment Agency and the courts below. If the Legislature wishes to dictate how Glaxon may or may not use Whetmore Cave, let the Legislature tell us how.

Order

Because majorities of the divided Court have affirmed each separate aspect of the Environment Agency's order, the decision of the Intermediate Court is affirmed in all respects.

Recommended Reading

The following books and articles are recommended as further readings in the field of environmental law, policy, and ethics. This list is not intended to provide a comprehensive bibliography of the topic, but rather is a reflection of the sources that influenced my own depiction of the divergent themes in the *Speluncean Polluters* opinions. Most of the references include a significant legal analysis component rather than focusing exclusively on policy and ethics. The omission of any work in the field of environmental law, policy, and ethics, therefore, is not intended to suggest it is either unimportant or unhelpful. Moreover, the inclusion of any work under a particular heading by no means implies that the author agrees with the positions taken in the corresponding *Speluncean Polluters* opinion, but rather that the work deals with the same subject matter in some relevant and important way.

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Introductory Sources

Many treatments of environmental law focus principally on just one of the policy and ethics perspectives covered in the *Speluncean Polluters* opinions. Such works are listed under their appropriate headings below. Several introductions to the topic, however, provide a comprehensive discussion including excerpts from important works representing each perspective. If a person new to the field were to read nothing more than one of these works, he or she would gain meaningful insight into the policy and ethical perspectives that differentiate the six *Speluncean Polluters* opinions. In particular, several recent anthologies are highly recommended:

AN ENVIRONMENTAL LAW ANTHOLOGY (Robert L. Fischman et al. eds., 1996).

MICHAEL C. BLUMM, ENVIRONMENTAL LAW (1992).

RICHARD L. REVESZ, FOUNDATIONS OF ENVIRONMENTAL LAW AND POLICY (1997).

In reality, of course, there are not six sharply differentiated "camps" of environmental perspectives. Rather, there is a spectrum of views, and many commentators borrow and blend from among the arguments found in each of the opinions. Hence, to better appreciate the nuances of environmental perspectives and to become more versatile in the evaluation of each, the following additional readings are recommended.

The Cost-Benefit and Comparative Risk Assessment Methods

RISK VS. RISK: TRADEOFFS IN PROTECTING HEALTH AND THE ENVIRONMENT (John D. Graham & Jonathan B. Wiener eds., 1995).

PETER ABELSON, COST BENEFIT ANALYSIS AND ENVIRONMENTAL PROBLEMS (1979).

KENNETH J. ARROW ET AL., BENEFIT-COST ANALYSIS IN ENVIRONMENTAL, HEALTH, AND SAFETY REGULATION: A STATEMENT OF PRINCIPLES (1996).

Katharine K. Baker, *Consorting with Forests: Rethinking Our Relationship to Natural Resources and How We Should Value Their Loss*, 22 ECOLOGY L.Q. 677 (1995).

Brian R. Binger et al., *The Use of Contingent Valuation Methodology in Natural Resource Damage Assessments: Legal Fact and Economic Fiction*, 89 NW. U. L. REV. 1029 (1995).

Frank B. Cross, *Natural Resource Damage Valuation*, 42 VAND. L. REV. 269 (1989).

Steven Kelman, *Cost-Benefit Analysis: An Ethical Critique*, REGULATION, Jan/Feb. 1981, at 33.

Free Market Environmentalism and Other Market-Based Approaches

WILLIAM BAXTER, PEOPLE OR PENGUINS? THE CASE FOR OPTIMAL POLLUTION (1974).

PAUL B. DOWNING, ENVIRONMENTAL ECONOMICS AND POLICY (1984).

NICK HANLEY ET AL., ENVIRONMENTAL ECONOMICS IN THEORY AND PRACTICE (1996).

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NICHOLAS MERCURO ET AL., ECOLOGY, LAW, AND ECONOMICS: THE SIMPLE ANALYTICS OF NATURAL RESOURCE AND ENVIRONMENTAL ECONOMICS (1994).

DAVID W. PEARCE, ECONOMICS OF NATURAL RESOURCES AND THE ENVIRONMENT (1990).

R. KERRY TURNER ET AL., ENVIRONMENTAL ECONOMICS (1993).

Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law*, 37 STAN. L. REV. 1333 (1985).

Jesse H. Ausubel, *Can Technology Spare the Earth?*, SCIENTIST, Mar. 1, 1996, at 166.

Kenneth Boulding, *The Economics of Spaceship Earth*, *in* ENVIRONMENTAL QUALITY IN A GROWING ECONOMY (1971).

Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

Robert Costanza, *Social Traps and Environmental Policy*, 37 BIOSCI. 407 (1987).

Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243 (1968).

Julian Simon, *Resources, Population, Environment: An Oversupply of False Bad News*, 208 SCI. 1431 (1980).

Robert N. Stavins & Bradley W. Whitehead, *Dealing With Pollution: Market-Based Incentives for Environmental Protection*, ENV'T, Sept. 1992, at 7.

Symposium, *Free Market Environmentalism*, 15 HARV. J.L. & PUB. POL'Y 297 (1992).

Sustainable Development and Precautionary Principles

AGENDA 21: THE EARTH SUMMIT STRATEGY TO SAVE OUR PLANET (Daniel Sitarz ed., 1994).

A SURVEY OF ECOLOGICAL ECONOMICS (Rajaram Krishnan et al. eds., 1995).

ECOLOGICAL ECONOMICS: THE SCIENCE AND MANAGEMENT OF SUSTAINABILITY (Robert Costanza ed., 1991)

KAI N. LEE, COMPASS AND GYROSCOPE: INTEGRATING SCIENCE AND POLITICS FOR THE ENVIRONMENT (1993).

MICHAEL MARIEN, ENVIRONMENTAL ISSUES AND SUSTAINABLE FUTURES (1996).

DAVID PEARCE ET AL., BLUEPRINT FOR A GREEN ECONOMY (1989).

MARK SAGOFF, THE ECONOMY OF THE EARTH: PHILOSOPHY, LAW, AND THE ENVIRONMENT (1988).

WORLD COMMISSION ON ENVIRONMENT & DEVELOPMENT, OUR COMMON FUTURE (1987) (The Brundtland Report).

Barry Commoner, *Failure of the Environmental Effort*, 18 Envtl. L. Rep. (Envtl. L. Inst.) 10,195 (June 1988).

R. Edward Grumbine, *What Is Ecosystem Management*, 8 CONSERVATION BIOLOGY 27 (1994).

Symposium, *Ecology and the Law*, 69 CHI.-KENT L. REV. 847 (1994).

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Private Property Rights and Libertarianism

RIGHTS TO NATURE: ECOLOGICAL, ECONOMIC, AND POLITICAL PRINCIPLES OF INSTITUTIONS FOR THE ENVIRONMENT (Susan Hanna et al. eds., 1996).

RON ARNOLD & ALAN GOTTLIEB, TRASHING THE ECONOMY: HOW RUNAWAY ENVIRONMENTALISM IS WRECKING AMERICA (2d ed. 1994)

DENNIS J. COYLE, PROPERTY RIGHTS AND THE CONSTITUTION: SHAPING SOCIETY THROUGH LAND USE REGULATION (1993).

RICHARD A. EPSTEIN, TAKINGS: PRIVATE PROPERTY AND THE POWER OF EMINENT DOMAIN (1985).

WILLIAM A. FISCHEL, REGULATORY TAKINGS (1995).

Richard O. Brooks, *Coercion to Environmental Virtue: Can and Should Law Mandate Environmentally Sensitive Lifestyles?*, 31 AM. J. JURIS. 21 (1986).

Deep Ecology and Environmental Ethics

THIS SACRED EARTH: RELIGION, NATURE, ENVIRONMENT (Roger S. Gottlieb ed., 1996).

JAMES LOVELOCK, THE AGES OF GAIA: A BIOGRAPHY OF OUR LIVING EARTH (1988).

LISA H. NEWTON & CATHERINE K. DILLINGTON, WATERSHEDS 2: TEN CASES IN ENVIRONMENTAL ETHICS (1997).

PAUL W. TAYLOR, RESPECT FOR NATURE: A THEORY OF ENVIRONMENTAL ETHICS (1986).

CHRISTOPHER D. STONE, THE GNAT IS OLDER THAN MAN (1993).

EDWARD O. WILSON, BIOPHILIA: THE HUMAN BOND WITH OTHER SPECIES (1984).

Eric T. Freyfogle, *Ownership and Ecology*, 43 CASE W. RES. L. REV. 1269 (1993).

James P. Karp, *A Private Property Duty of Stewardship: Changing Our Land Ethic*, 23 ENVTL. L. 735 (1993).

Robert B. Keiter, *Beyond the Boundary Line: Constructing a Law of Ecosystem Management*, 65 U. COLO. L. REV. 293 (1994).

Aldo Leopold, *The Land Ethic*, *in* A SAND COUNTY ALMANAC (Ballantine Books 1970).

Laurence H. Tribe, *Ways Not to Think About Plastic Trees: New Foundations for Environmental Law*, 83 YALE L.J. 1315 (1974).

Lynn White, Jr., *The Future of Compassion*, 30 ECUMENICAL REV. 99 (1978).

Environmental Justice

TIMOTHY BEATLY, ETHICAL LAND USE: PRINCIPLES OF POLICY AND PLANNING (1994).

KENNETH J. MANASTER, ENVIRONMENTAL PROTECTION AND JUSTICE (1995) (anthology).

DAVID E. NEWTON, ENVIRONMENTAL JUSTICE: A REFERENCE HANDBOOK (1996).

UNEQUAL PROTECTION: ENVIRONMENTAL JUSTICE AND COMMUNITIES OF COLOR (Robert D. Bullard ed., 1994).

PETER S. WENZ, ENVIRONMENTAL JUSTICE (1988).

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Vicki Been, *Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics*, 103 YALE L.J. 1383 (1994).

Symposium, *Urban Environmental Justice*, 21 FORDHAM URB. L.J. 425 (1994).

Symposium, *Race, Class, and Environmental Regulation*, 63 U. COLO. L. REV. 839 (1992).

The Delegation Question

Many readers undoubtedly will notice that there are seven opinions in the essay, though it purported to present only six environmental perspectives. The seventh opinion is intended to remind us that any policy and ethical perspective that might dominate the legal framework of environmental law must do so in way that is consistent with constitutional and other structural limitations on government generally. Indeed, there are at least as many perspectives on the proper political design of environmental law—issues of federalism, due process, administrative powers, and so on—as there are regarding the underlying policy and ethical perspectives. The Essay presents one such perspective on an issue relevant to each of the branches of government—the permissible extent of delegation of legislative authority to administrative agencies. Readings on that topic that shaped the *Speluncean Polluters* opinion include:

DAVID SCHOENBROD, POWER WITHOUT RESPONSIBILITY (1993).

CASS SUNSTEIN, AFTER THE RIGHTS REVOLUTION (1990).

Gary Lawson, *The Rise and Rise of the Administrative State*, 107 HARV. L. REV. 1231 (1994).

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