Introduction

In the author's view, most legal reasoning suffers from the fact that it is done in vacuo. The practical validity of any given legal principle, however enshrined in tradition or popular consensus, can only be determined with reference to its observable and predictable effects on the world in which we live. What follows is an attempt to apply this empirical approach to the pressing problem of land use planning, not to elicit an ultimate answer, but rather to indicate the direction in which future inquiries should proceed.

The thesis of this Perspective is that the cause of many of our most pressing social problems in general, and of the land use problem in particular, is the fundamental denial in modern Western civilization of the interdependence of people with their fellows and their environment.

Part One presents the views of various thinkers in other disciplines on the current ecological crisis, the nature of ecological reality, and the role that ecologically sensitive land use planning would play in creating a sound society.

Part Two of the Perspective explores the idea of private property. Its philosophical history illustrates our lack of sensitivity to ecological concerns. The problems posed by a private property system for ecologically sound land use are discussed.

Part Three explores the current state of “takings” law. This is done for two reasons. First, the constitutional mandate that private property shall not be taken for public use without the payment of just compensation represents a formidable obstacle to environmentally sensitive land use regulation.\footnote{1} Second, the development of the law of

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1. U.S. CONST., amend. V. \textit{See also} U.S. CONST. amend. XIV § 1.
"takings" illustrates the environmental insensitivity of the land use law produced by our view of property. The major "takings" theories as embodied in case law and the views of the area's most prominent commentator are considered in the light of the conclusions reached in Part One, and an environmentally sensitive "takings" theory is proposed.

I
WESTERN CIVILIZATION AND ECOLOGICAL REALITY

A. Causes of the Ecological Crisis

Once upon a time there was a man who sought escape from the prattle of his neighbors and went to live alone in a hut he had found in the forest. At first he was content, but a bitter winter led him to cut down the trees around his hut for firewood. The next summer he was hot and uncomfortable because his hut had no shade, and he complained bitterly of the harshness of the elements.

He made a little garden and kept some chickens, but rabbits were attracted by the food in the garden and ate much of it. The man went into the forest and trapped a fox, which he tamed and taught to catch rabbits. But the fox ate up the man's chickens as well. The man shot the fox and cursed the perfidy of the creatures of the wild.

The man always threw his refuse on the floor of his hut and soon it swarmed with vermin. He then built an ingenious system of hooks and pulleys so that everything in the hut could be suspended from the ceiling. But the strain was too much for the flimsy hut and it soon collapsed. The man grumbled about the inferior construction of the hut and built himself a new one.

One day he boasted to a relative in his village about the peaceful beauty and plentiful game surrounding his forest home. The relative was impressed and reported back to his neighbors, who began to use the area for picnics and hunting excursions. The man was upset by this and cursed the intrusiveness of mankind. He began posting signs, setting traps, and shooting at those who came near his dwelling. In revenge a group of boys would come at night from time to time to frighten him and steal things. The man took to sleeping every night in a chair by the window with a loaded shotgun across his knees. One night he turned in his sleep and shot off his foot. The villagers were chastened and saddened by this misfortune and thereafter stayed away from his part of the forest. The man became lonely and cursed the unfriendliness and indifference of his former neighbors. And in all this the man saw no agency except what lay outside himself for which reason, and because of his ingenuity the villagers called him the American.  

2. Preface to P. Slater, The Pursuit of Loneliness at xi-xii (paper ed. 1971) [hereinafter cited as Slater].
Like the man in the parable, many of us feel victimized by external forces beyond our control and comprehension. Even if Western civilization is able to avoid a cataclysmic end to its existence, it is becoming increasingly apparent that the walls of the citadel are being destroyed from within. The very "civilization" in which we live seems bent upon destroying the fabric of life upon which we depend. The price of the material plenty enjoyed by some appears to be the destruction of the ecosphere required by all.\(^3\)

How has it come to pass that a deeply troubled observer feels compelled to warn us that: "environmental degradation, if unchecked, threatens the survival of civilized man"?\(^4\) How is it that the very agricultural system upon which we depend for our daily sustenance has become an ecologically unsound morass of dangerous pesticides and fertilizers?\(^5\)

Are we, like the unfortunate in the parable, the unwitting source of our dilemmas? Our current problems may be the manifestation of a potentially fatal flaw in our world view, deeply rooted in our Judeo-Christian heritage. Some commentators suggest that the dualistic, anthropocentric view of nature embodied in the Judeo-Christian creation myth and its companion concept of linear time are the source of our troubles.\(^6\) These thinkers point to the animistic world view inherent in the "primitive" pantheistic religions as more likely to generate an ecologically sound society.\(^7\) Many cultures which were destroyed in our rise

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3. The most destructive civilization the earth has ever seen has caused one noted archaeologist to suggest "that perhaps man, like a blight descending on fruit, is by nature a parasite, a spore bearer, a world-eater," and to draw possible parallels between man with his rocketry and *Pilobolus*, a fungus which prepares, sights, and fires a spore capsule to perpetuate its species' existence. L. EISELY, THE INVISIBLE PYRAMID 53, 75-77 (paper ed. 1970) [hereinafter cited as EISELY]. Those attracted to this analogy will find small comfort in the fact that only a few of the hundreds of thousands of spores thus launched survive. Such may be the "infinite prodigality of nature," but surely most of us would seek a less rigorous route for man. *Id.* at 77.


5. Present agricultural practice stresses primary utilization of the new high-yield varieties of wheat and rice. This necessitates abnormally high inputs of pesticides and of inorganic fertilizers which are in short supply and high contributors to water pollution. Concentration on crop monocultures is also ecologically unsound in that they are inconsistent with the genetic diversity necessary to ensure a long-term stable agricultural system. EDITORS OF THE ECOLOGIST, BLUEPRINT FOR SURVIVAL 10-11 (paper ed. 1974) [hereinafter cited as BLUEPRINT]; COMMONER, supra note 4, at 145-50.


7. "In the pantheist view the entire phenomenal world contains godlike attributes: the relations of man to this world are sacramental. It is believed that the actions of man in nature can affect his own fate, that these actions are consequential, immediate and relevant to life." I. MCHARG, DESIGN WITH NATURE 68 (paper ed. 1971) [hereinafter cited as MCHARG].
to “world eating” ascendancy had developed an outlook toward their environment capable of sustaining them in perpetuity, had we not intervened.\(^8\)

Others who have considered these questions fault our notions of individuality and competition, seeing in these a denial of the interdependence among men and between man and nature.\(^9\) Thus, men, viewing themselves as discrete entities, separate from their fellows and their environment and with an individual future determined by individual actions, undertake courses of action motivated by personal gain, ultimately producing a collective ruin all must share.\(^10\)

The source of our malaise may also be rooted in our capacity for dealing in abstractions, that ability which facilitated the logical ordering essential to the Scientific Method, and hence the evolution of civilization as we know it. The invention of language, the \textit{sine qua non} of all human civilizations, has enabled us to create separate realities, and to remove ourselves from the natural world in which we live to a cerebral world of our own creation. When we then act in accord with our artificial world, the disastrous impact of our fantasies upon the natural world in which we live is ignored.\(^11\)

These criticisms all treat facets of the same problem.\(^12\) It is

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8. \textsc{Eiseley}, supra note 3. Consider the North American Indian societies and most of the primitive hunter-gatherer and simple agricultural societies in this regard. \textit{See}, \textsc{McHarg}, supra note 7, at 67-68. It should be pointed out, however, that some thinkers are critical of agricultural societies, farming being seen as “the seed of alienation between humankind and nature. . . .” \textsc{G. Leonard}, \textsc{The Transformation} 57 (paper ed. 1973) [hereinafter cited as \textsc{Leonard}].

9. “The mechanized disaster that surrounds us is no small part a result of our having deluded ourselves that a motley scramble of people trying to get the better of one another is socially useful instead of something to be avoided at all costs.” \textsc{Slater}, supra note 2, at 133.

10. “What all of our complex language about money, markets, and profits tends to mask is the fact that ultimately, when the whole circuitous process has run its course, we are producing for our own consumption. When I exploit others, through mass media or marketing techniques I am also exploiting and manipulating myself. The needs I generate create a treadmill that I myself will walk upon. It is true that if I manufacture shoddy goods, create artificial needs, and sell vegetables, fruit, and meat that look well but are contaminated, I will make money. But what can I do with this money? I can buy shoddy goods and poisoned food, and satisfy ersatz needs. Our refusal to recognize our common economic destiny leads to the myth that if we all overcharge each other we will be better off.” \textit{Id.} at 133-34.

11. Linguists label this power of language “displacement.” \textsc{Eiseley}, supra note 3, at 140-43.

12. A more detailed examination of these analyses than the brief sketch made above lends considerable credence to this view. One tempting synthesis goes like this: Western man’s capability for abstract reasoning and the displacement effect of language have combined with his heritage not only to facilitate the development of a world-view of man apart from nature, but to enable man to largely ignore the havoc which he, acting in consonance with this view, has wrought upon the natural world.
important to recognize that, whether the analysis be in terms of religious, economic, or linguistic patterns, there is wide agreement that the cause, not only of the environmental crisis, but of many of our other economic, social, and political problems as well, can be traced to modern Western man's denial of the reality of his interdependence with his fellow man and with his environment.

B. The Fundamentals of Ecological Reality

Western man is a part of an ecosystem which he is only beginning to understand, having only recently recognized the need for such understanding. However, the science of ecology has already arrived at some generalizations about the nature of our world and our relationship to it which we may label "laws of ecology."13

The first of these laws is that "everything is connected to everything else."14 It means that all living organisms exist in a system of interdependent networks, the essential ecological effect of which is to counter the effects of the second law of thermodynamics which says that there is in all systems a tendency toward randomness.15 This negentropic tendency is possible because the earth is an open system receiving continuous inputs of energy from the sun.16 Though many natural processes are involved in the battle against entropy, the fundamental agent of life's forces is the plant.17

Man is not essential to the negentropic process. The most fruitful role he can hope for is that of a careful custodian of the natural processes which sustain him. This view of man's limited role is confirmed by the other laws of ecology.

The second law of ecology is that "everything must go some-

13. COMMONER, supra note 4, at 29-42.
14. Id. at 29.
15. "[I]t can be said that the ecosphere differs from the surface of the moon and probably from that of all the other planets in our solar system, in that randomness, or entropy, has been progressively reduced and organization, or negative entropy, has been correspondingly increased." BLUEPRINT, supra note 5, at 52.
16. "We can now see the earth as a process in which energy continually falls, which inevitably will be degraded, but which through physical processes and life is arrested and entrapped in creatures, raising matter, as evolution proceeds, to higher and higher order." McHARG, supra note 7, at 53.
17. "Not only is the chloroplast the overwhelmingly dominant mechanism whereby the light of the sun is transmuted into the substances supporting all life, the sugar and carbohydrates, but there are grounds for believing that it is from the exhalations of plants in all time that an atmosphere with free oxygen has developed. Indeed, all food, all fossil fuels, fibres, all atmospheric oxygen, the stabilization of the earth's surface and its terrestrial water systems, the melioration of climate and micro-climate have been accomplished by the plant: All animals and thus all men were plant parasites. It is the plant that colonized the land and thus permitted the evolution from the sea of amphibians, reptiles, mammals and man, and this dependence persists unchanged." Id. at 46.
The indestructibility of matter translated in ecological terms means that a natural system is a closed system. Thus, pesticides pumped into the environment to destroy insects end up in man's body and in the bodies of other organisms; inorganic fertilizers sprayed into the earth to force unnaturally high crop yields wind up in man's drinking water and bloodstream; and the hundreds of thousands of synthetic substances that we have created will remain in our ecosystem since there are no enzymes extant in nature to break them down and return their components to the life cycle.

The third law of ecology is that "nature knows best." Natural systems are the end product of millions of years of natural selection and, hence, are likely to have attained optimal efficiency. Conversely, human intervention in the workings of such systems is likely to be harmful. Thus, human activities that interrupt natural cycles must be controlled. This includes such activities as the production and use of pesticides and synthetics and the discharge of sewage, treated or untreated, into water systems instead of returning it to the soil. In addition, any human activity which removes natural elements from their normal functioning roles in the ecosystem is suspect. Yet everywhere we ignore this truth. Modern agricultural practices replace complex plant ecosystems with crop monocultures. Wilderness land, one of our last great reservoirs of genetic diversity, is legally developed into oblivion. Food chains are reduced in complexity by our destruction of animal species on land and sea. We do this despite the fact that complex systems are much more stable and thus much less susceptible to potentially catastrophic failures.

The fourth law of ecology is borrowed from economics: "there is no such thing as a free lunch." This proposition embraces the first three and concisely expresses our interdependency and the finitude of our earthly resources; the inescapable reality is that the ecosystem is open-ended as regards energy, but is a closed system with regard to

18. COMMONER, supra note 4, at 36.
19. Id. at 37.
20. For a detailed discussion of the deleterious ecological effect of current sewage disposal practices, see COMMONER, supra note 4, at 95-107, 179-81, and 186-87.
21. Note 5 supra.
22. BLUEPRINT, supra note 5, at 28-29.
23. Id. at 58-59.
24. "They (simple, uniform systems) are inordinately vulnerable to epidemic disease in that they provide large uniform populations for any parasite. In contrast, complex and diverse systems are unlikely to provide large populations of single organisms which are so vulnerable. Moreover, the larger the number of species, the larger the genetic pool capable of adapting to any exigency. On all counts, the complex environment will be more stable." McHARG, supra note 7, at 120.
25. COMMONER, supra note 4, at 41-42.
This ultimate reality is inescapable. Our space technology is far too primitive to allow us to contemplate plundering our own solar system, let alone undertaking a mass exodus to greener pastures in other solar systems, and "no feat of scientific legerdemain can prevent the eventual exhaustion of the world's mineral resources at a time not very distant."

C. Ecological Reality and Land Use Planning

The fundamental ecological laws posited above dictate massive changes in western industrial society. These changes include a restructuring of the economic system and the adoption of ecologically sensitive land use practices. These two propositions are intimately interconnected.

In the economic realm, what we have learned about ecological reality demonstrates that only a steady-state economic system is capable of enduring. A system which depends on the increasing exploitation of natural resources is irreconcilable with ecological reality. Yet that is precisely what we of the West have and would have others in underdeveloped nations embrace (at least until they begin seriously competing with us for the resources which we have helped to make scarce). Secondly, an economic system whose social accounting and pricing systems treat air, water, and land as free and unlimited resources is subsidizing environmental degradation. Finally, an economic system in which decisions affecting everyone and everything are made by individuals concerned with short-run, personal monetary gain is fundamentally unjust and geared to produce collective ruin. The ultimate question, therefore, is not whether we should change our economic system, but rather what the changes shall be and how they shall come about.


27. "It has been estimated that to reach the nearest star to our own, four light years away, would require, at the present speed of our spaceships, a time equivalent to more than the whole of written history, indeed one hundred thousand earthly years would be a closer estimate—a time as long, perhaps as the whole existence of Homo sapiens upon earth . . . . Even if our present rocket speeds were stepped up by a factor of one hundred, human generations would pass on the voyage." EISLY, supra note 3, at 35-36.

28. **Id.** at 65. See also **Blueprint**, supra note 5, at 13 for an indication that the exhaustion of the known reserves of all but a few metals will occur within 50 years if consumption rates continue to grow at present rates.

29. For a detailed exposition of the relationship between conventional economics and environmental degradation, see **Commoner**, supra note 4, at 249-91.

30. "The principal defect of the industrial way of life with its ethos of expansion is that it is not sustainable. Its termination within the lifetime of someone born today is inevitable—unless it continues to be sustained for a while longer by an entrenched minority at the cost of imposing great suffering on the rest of mankind. We can be certain, however, that sooner or later it will end (only the precise time and circumstances
What is the substance of the task before us? Economically, we must move from an economy of flow to an economy of stock. This means turning our backs on false needs, resource-intensive and energy-intensive industries, and short-lived products in favor of recycling, employment-intensive industries, and durable products. Economic decisions, which are essentially a matter of resource allocation and distribution, must be made within the parameters of what we know about the ecosystem, with a primary emphasis upon supplying the most people with the necessities of existence on the most efficient, long-term basis.

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In the realm of land use, ecologically sound land use planning requires that land use decisions be made in accordance with the ecological significance and tolerance to human use of the various types of physiographic regions. Ian McHarg has, for example, identified eight basic physiographic land types, identified their respective roles in natural processes, and delineated their inherent suitability to various human uses. Sadly, although the knowledge is extant to enable us to make intelligent choices, conventional land use planning generally ignores the role of the land in natural processes when decisions are made.

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31. For an example of the sort of planning which is possible and necessary for an orchestrated evolution to an environmentally sane way of life, see BLUEPRINT, supra note 5, at 3.

32. McHARG, supra note 7, at 57-65. For a specific example of this type of use suitability analysis applied to a particular geographic area, see BAILEY, LAND-CAPABILITY CLASSIFICATION OF THE LAKE TAHOE BASIN, CALIFORNIA-NEVADA; Forest Service, U.S. Department of Agriculture (1974).

Ecologically sound land use planning would, for example, recognize the value of prime agricultural land and protect it from urbanization.\textsuperscript{34} Such planning would recognize the natural role of forests: in diminishing erosion, sedimentation, flood, and drought; as a haven of genetic diversity and a habitat for wildlife; and as a base of the photosynthetic process. Our utilization of forests must reflect their roles in nature.\textsuperscript{35} Some areas, like primary dunes, which by their nature are intolerant of use, should be left totally undeveloped.\textsuperscript{36} In short, development according to conventional patterns must cease, ecologically sound land use planning must be substituted, and the mistakes of past land use decisions reversed by reclamation programs wherever feasible.

The forces arrayed against recognition of ecological reality in the area of land use planning are formidable. In addition to the entrenched ignorance, emotionalism, social inertia, and powerful vested interests which confront those seeking reform in the economic structure of society, those who seek reform in land use planning in this country must do battle with the cherished notion of private ownership of real property. The first step must be a thorough analysis of the historical development of the concept of private property in Western civilization.

This is so for two reasons. First, an intellectually thorough challenge to any logical construct, be it a social institution or a political or legal theory, requires an examination of the premises upon which the construct is based. If the premises are invalid, whatever follows, however blessed by internal logical consistency, must also be invalid. Second, because the contemporary idea of private property is inherently a denial of the interdependence discussed in Part One, meaningful change in land use practices is impossible until such time as we collectively recognize the realities of ecological interdependence.

\textsuperscript{34} Unfortunately, the generally flat nature of such lands makes them especially attractive to developers, with the consequent result that there is an inverse relationship between the availability of arable land and urbanization. D. MEADOWS, THE LIMITS TO GROWTH 59-62 (paper ed. 1972). This is, of course, directly in conflict with the fact of increasing population and the fact that present productivity levels are artificially high and ultimately non-sustainable. See note 5 supra. Clearly a change-over to ecologically sound agricultural methods would necessitate an even greater availability of arable land.

\textsuperscript{35} McHarg has identified these as forestry, recreation, and housing at densities not higher than one house per acre. McHARG, supra note 7, at 62.

\textsuperscript{36} “[T]he primary dune \[immediately adjacent to beach areas\] . . . is absolutely intolerant. It cannot stand any trampling. It must be prohibited to use. If it is to be crossed, and crossed it must be to reach the beach, then this must be accomplished by bridges. Moreover, if the dune is to offer defense against storms and floods, then it must not be breached. As a consequence, no development should be permitted on the primary dune, no walking should be allowed and it should not be breached at any point.” \textit{Id.} at 13.
THE IDEA OF PRIVATE PROPERTY

All men are born free and equal and have certain natural, essential and unalienable rights; among which may be reckoned the right... of acquiring, possessing, and protecting property. (Massachusetts Bill of Rights, 1780.)

LAND, n. A part of the earth's surface, considered as property. The theory that land is property subject to private ownership and control is the foundation of modern society, and is eminently worthy of the superstructure. Carried to its logical conclusion, it means that some have the right to prevent others from living; for the right to own implies the right to exclusively occupy; and in fact laws of trespass are enacted wherever property in land is recognized. It follows that if the whole area of terra firma is owned by A, B and C, there will be no place for D, E, F and G to be born, or born as trespassers, to exist.

The classical arguments for and against the recognition of private property as a social institution arose from the struggle between those who sought to justify and preserve extant patterns of property ownership and those who sought to change them.

The following section briefly sets out the historical development of the struggle. This discussion reveals that none of the major Western property theories, whether they advocated common or private ownership of land, reflected the laws of ecological reality as we now understand them.

The early Christian philosophers attempted to reconcile the New Testament's distrust of riches and its advocacy of brotherly love, which pointed to a communal theory of property, with a social scheme based on unequally distributed, privately held property. Although all men were created equal and were of equal worth in the eyes of the Lord, the depravity of men since the Fall from Grace necessitated instruments of social control, such as the division of property. Private property was thus seen as the product of sin and a creation of the state, common ownership being the natural condition from which man was barred by his avaricious nature.

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37. It has also been held that the U.S. Constitution protects the right "to acquire, use and dispose of" property. Buchanan v. Warley, 245 U.S. 60, 74 (1917).
40. 1 CARLYLE, History of Medieval Political Theory in the West 146 (1903).
Two major deficiencies limited this approach as a defense of private property. First, it gave many the idea that mankind's true course was to seek a return to the equalitarian natural state of communality. 41 Secondly, the view of property as a creation of the state could lend support to an abridgement of property rights by the state, 42 which it in fact did when it was used to justify feudal absolutism. Those who defended private property were thus given incentive to devise a rationale whereby it could be seen as natural rather than as a creation of the state. 43

It was left to a representative of the middle class, John Locke, to popularize the natural rights theory of property, a theory which could simultaneously justify the existence of private property and protect it against unwanted intrusions by the sovereign. Locke argued that the right to property was a natural one in that man by his labor separates a thing from its natural state and thereby acquires rights in it to the exclusion of others. Thus private property was a right mandated by the law of nature, which transcended human conventions and which all men were therefore bound to recognize. 44 The middle class found in this

41. Religious radicals were, for several centuries, among the most vigorous opponents of private property. SCHLATTER, supra note 39, at 36, 72-79.
42. See, e.g., St. Augustine:
"By what right does every man possess what he possesses? Is it not by human right? For by divine right 'the earth is the Lord's and the fullness thereof.' The poor and the rich God made of one clay; the same earth supports alike the poor and the rich. By human right, however, one says, This estate is mine, this house is mine, this servant is mine. By human right, therefore, is by right of the emperors. Why so? Because God has distributed to mankind these very human rights through the emperors and kings of this world . . . Or take away rights created by emperors, and then who will dare say, That estate is mine, or that slave is mine, or this house is mine?" 7 A SELECT LIBRARY OF THE NICENE AND POST-NICENE FATHERS 47 (P. Schaff ed. 1956).
43. St. Thomas Aquinas, as a defender of Papal supremacy, sought to resolve the first problem by redefining the term "natural."
"A thing is said to belong to the natural law in two ways. First, because nature inclines thereto: e.g. that one should not do harm to another. Secondly, because nature did not bring with it the contrary. Thus we might say that for man to be naked is of the natural law, because nature did not give him clothes, but art invented them. In this sense, the possession of all things in common and universal freedom are said to be of natural law, because, namely, the distinction of possessions and slavery were not brought in by nature, but devised by human reason for the benefit of human life. Accordingly, the law of nature was not changed in this respect, except by addition. Summa Theologica, 2 THE BASIC WRITINGS OF ST. THOMAS 780 (A. Pegis ed. 1945).

Aquinas, however, felt that the state had the power to regulate for the common good the general system of private property which natural law bound it to maintain, and that common ownership or no ownership was the most perfect form of property. 2 T. AQUINAS, SUMMA CONTRA GENTILES III 137-52 (Dominican Fathers transl. 1928).
44. "Though the earth, and all inferior creatures, be common to all men, yet every man has a property in his own person: this no body has any right to but himself. The labor of his own body and work of his hands, we may say, are properly his. Whatever, then, he moves out of the state that Nature hath provided and left it in, he hath mixed his labor with, and joined it to
theory a powerful weapon against the powers of royalty. It became the classical bourgeois theory of property despite the fact that it could also be used to condemn a great deal of property they regarded as legitimate (any property not earned by the owner's work), and that Locke had been talking of the state of nature and regarded contemporary property as conventional.\textsuperscript{45} Blackstone adopted a modified version of Locke, arguing that men originally had acquired temporary property rights in things by use and later agreed that the occupancy which bestowed the right to use gave original rights in the substance of the earth as well.

For, by the law of nature and reason, he who first began to use it, acquired therein a kind of transient property, that lasted so long as he was using it, and no longer . . . . But when mankind increased in number, craft, and ambition, it became necessary to entertain conceptions of more permanent dominion; and to appropriate to individuals not the immediate use only, but the very substance of the thing to be used.\textsuperscript{46}

The American colonists found the natural rights theory attractive. The rallying cry of "no taxation without representation" was an embodiment of Locke's theory: man's property, acquired by his labor, was his by natural law and could not be expropriated without his consent. The fifth amendment was designed to protect the "natural right" of property from despotic acts of government.\textsuperscript{47} But the theory was used by proponents of equally distributed private property who argued that man's right to acquire land by cultivating it was limited by the equal right of his neighbors: where the supply of land was limited, each person could claim no more than an equal share.\textsuperscript{48}

Eighteenth century landowners were disconcerted that the natural rights theory, which had been an asset in their struggle for ascendancy, became a liability in the hands of equalitarians. The utilitarian theory

\begin{itemize}
\item [\textsuperscript{45}] Of Property, 2 THE WORKS OF JOHN LOCKE 174 (Desmaizeaux ed. 1751).
\item [\textsuperscript{46}] "[T]he several communities settled the bounds of their district territories; and, by laws, within themselves, regulated the properties of the private men of their society; and so, by compact and agreement, settled the property, which labor and industry began." Id. at 179.
\item [\textsuperscript{47}] W. BLACKSTONE, COMMENTARIES ON THE LAWS OF ENGLAND 3-4 (E. Christian ed. 1796) [hereinafter cited as BLACKSTONE].
\item [\textsuperscript{48}] WRIGHT, AMERICAN INTERPRETATIONS OF NATURAL LAW 136-38 (1931).
\end{itemize}
stated by David Hume and popularized by Jeremy Bentham challenged the equalitarians. The essence of this argument was that rules of law were merely social conventions justified by their utility whenever experience showed them to be useful for the promotion of happiness.\textsuperscript{49} Unequally distributed private property was justified as being in the general best interest of society. Socialists seized upon utilitarian theory, just as they had the natural rights theory, as a justification for equal distribution of wealth. They argued that socialist redistribution of wealth was the way to produce the maximum of happiness.\textsuperscript{50}

Another school of property law theory, the historical rights theory, as advanced by Friedrich Karl von Savigny and others, denied the existence of any singularly valid system of property, holding instead that the most desirable property laws for a particular society were those which recognized and protected the traditional rights which had evolved within that society.\textsuperscript{51} The socialists and communists pointed to the then newly emerging anthropological evidence that communal ownership was typical of many primitive societies.\textsuperscript{52}

The conservative reply was that the history of the development of private rights in property indicated a progression from collective to several ownership, thus correlating civilization with the recognition of individual rights.\textsuperscript{53} The socialists responded that history demonstrated the inevitability of change and that, therefore, the shift from private rights to communal ownership was imminent.\textsuperscript{54}

The Hegelian theory of property identified private property with liberty. Hegel argued that the individual objectified himself and realized external freedom by the appropriation of property.\textsuperscript{55} Consequently, any form of common ownership was seen as a limitation on the freedom of the individual, since no one in a communal situation could control the community property solely in accordance with his own will.\textsuperscript{56} The

\textsuperscript{49} Hume, \textit{Of Justice, Essays, Moral, Political, and Literary} 180-83 (Green & Grose ed. 1875).
\textsuperscript{50} See, e.g., 8 W. GODWIN, \textit{Political Justice} ch. 3 (2d ed. 1976).
\textsuperscript{51} SCHLATTER, \textit{supra} note 39, at 262.
\textsuperscript{52} 2 F. ENGELS, \textit{The Origin of the Family, Private Property, and the State} (1972).
\textsuperscript{53} This view was labeled the “historical method” and was popularized by Sir Henry Maine in his book, \textit{Ancient Law} (1873).
\textsuperscript{54} The \textit{Communist Manifesto, supra} note 48, at 81. See generally, 1 K. MARX, \textit{Das Kapital} (1867).
\textsuperscript{55} “A person has the right to direct his will upon any object as his real and positive end. The object thus becomes his. As it has no end in itself, it receives its meaning and soul from his will.” G. HEGEL, \textit{Philosophy of Right} 51 (S. Dyde transl. 1896).
\textsuperscript{56} \textit{Id.} at 65-68.
proponents of social change called for state regulation of business and social legislation, pointing to Hegel's conclusion that all men should have property since each has a personality to express.57

How striking it is that the ideological course of the struggle should have followed such an ethereal path, for surely such notions as "natural rights," and the "common good" are unknowables; the unprovable products of value judgments. The historical antagonists were never concerned with the impact of their constructs upon the natural environment, and we, for the most part, have followed in their footsteps. These historical illustrations exemplify the denial of reality postulated in Part One.58 Any idea of property formulated in such circumstances must be fundamentally flawed.

Our course of action must therefore be to re-examine our notions of private property in the light of ecological reality. That the present effects of private ownership on the environment have been deleterious is incontrovertible in view of our history of waste and destruction. That the boundary lines men draw on maps represent no other reality than a conventional one constructed for poorly perceived social ends should also be apparent.

This brings us back to the question posed at the end of Part One: can the notion of private property be successfully infused with ecological sensitivity, or is the notion in itself such a denial of the reality of interdependence that it must be rejected before any progress toward environmental sanity can be made? One might argue that the truly rational and informed landowner would make only an environmentally sound use of his land, because he would realize that if he and others like him do otherwise they must eventually reap what they have sown. This, however, presumes a general shift in motivational patterns away from individual aggrandizement and toward group welfare.

If individual gain is viewed as the ultimate good, it may, in the short run, dictate courses of conduct detrimental to group interests. This fact is illustrated by one of the most famous pieces of writing on the environmental problem, Garrett Hardin's The Tragedy of the Commons, in which Hardin recounts the lock-step march toward destruction by individual herdsmen who share a common pasture.59 The herdsman perceives that the positive utility of adding one additional animal to his herd outweighs the negative utility of the resultant overgrazing because he alone reaps the profits from the additional animal, while all the herdsmen share the effects of overgrazing.60 Therefore, the pursuit of

57. SCHLATTER, supra note 39, at 260.
58. Id. at 3-4.
59. 162 SCIENCE 1243 (1968).
60. Id. at 1244.
individual self-interest culminates in collective ruin, as each herdsman adds animals until the commons is destroyed.\textsuperscript{61}

Hardin and many others perceive this argument to be a conclusive indictment of common ownership of property. This view is erroneous for two reasons. First, it overlooks the fact that the genesis of overgrazing was \textit{not} the fact that the pasture was a commons, but that the herds were privately owned. Had the herds also been owned in common, there would have been no incentive to overgraze.

Second, the implicit assumption that if communal ownership results in the destruction of property, private ownership of land will necessarily result in its protection, is obviously fallacious in view of recent history. Where the economic system is based on private gain, private ownership of property may still lead to ecologically harmful results. For example, the positive utility to the landowner of developing his wetland property normally exceeds the negative utility to him of its removal from its proper ecological role, the consequences of which are borne by all of us.

Communal ownership patterns and socialist economics can foster a recognition of interdependency, given their emphasis on group welfare and their lack of any systemic characteristics encouraging short-run, individual profit seeking behavior. Such consciousness can in turn lead to the adoption of a resource allocation pattern more environmentally sensitive than that produced by private ownership and capitalist economics. It should be apparent, however, that even common ownership of property and socialist economics, in the absence of proper concern for ecological values, are certain to produce common ruin.\textsuperscript{62}

Obviously, the foregoing discussion is purely speculative in nature, since at this juncture no contemporary society, socialist or capitalist, has seriously attempted to embrace ecological values. One thing, however, should be clear at this point, and that is that rational land use regulation consonant with the view of ecological reality espoused in Part One dictates some modification of our legal concepts of property. An examination of our law of property in the area of land use regulation indicates that judges have generally shown no more concern for the needs of the environment than did the philosophers previously discussed.

\textsuperscript{61} The current attitude of private enterprise toward attempts to control industrial pollution, seeing such efforts as something to be resisted and circumvented wherever possible on the grounds of profitability, is an obvious example of the same brand of selfish short-sightedness. This is because the ultimate result of pollution is the degradation of the environment, upon which the future existence of any enterprise necessarily depends.

III

"TAKINGS" LAW AND ECOLOGICAL REALITY

There is nothing which so generally strikes the imagination, and engages the affections of mankind, as the right of property; or that sole and despotic dominion which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe.63

While Blackstone's statement may express the visceral response to the concept of property prevalent in his time, and indeed, all too prevalent today, the law has long recognized that one owning property did not in fact enjoy "that sole and despotic dominion" to which Blackstone alluded. One who used his property in such an unreasonable manner as to interfere substantially with the use and enjoyment of another's property could be compelled to cease the offending activity via a private nuisance action.64 If the impact of one's activities was perceived to be sufficiently broad as to affect adversely the rights of the community, a public nuisance action would lie.65 The courts, despite ignorance of ecological reality, had perceived to some degree that an individual's use of his own property could have ruinous effects on his fellows.66

The law also came to recognize the need for systematic land-use controls, and thus the power of government to zone, predicated upon the inherent police powers of the sovereign to protect and preserve the public health, safety, and welfare, was sustained.67 In recognizing the power to zone, the courts rejected the argument that any and all such restrictions on the use of private property ran afoul of the "takings" clause of the fifth amendment. The courts did, however, recognize that certain types of governmental attempts to control land use could constitute compensable takings. It thus became necessary to determine what characteristics and circumstances separate a legitimate exercise of the police power from an illegal taking without compensation.

The answer to this question is of critical importance to one seeking an ecologically sensitive land use policy, since that policy would, in

63. BLACKSTONE, supra note 46.
64. W. PROSSER, HANDBOOK OF THE LAW OF TORTS 611 (3rd ed. 1964) [hereinafter cited as PROSSER].
65. Id. at 605.
66. "To permit anyone to do absolutely what he likes with his property in creating noise, smells, or danger of fire, would be to make property in general valueless. To be really effective, therefore, the right of property must be supported by restrictions or positive duties on the part of the owners, enforced by the state as much as the right to exclude others which is the essence of property." Cohen, Property and Sovereignty, 13 CORNELL L.Q. 8, 21 (1927).
some circumstances, involve drastic interference with a landowner's use of his property, either by denying him any profitable use of the property or by requiring him to discontinue uses for which the property is inherently unsuited. While it is clear that the government can legitimately exercise its eminent domain power to secure ecologically sound land use, the effort could be completely thwarted by requiring the payment of compensation to all the landowners whose rights would thereby be seriously affected.

At what point, then, does regulation "take" property in a mandatorily compensable manner? The answer is by no means clear. Judicial statements on the subject are inconsistent, and legions of commentators have scrutinized the topic with little discernable success.

The first test the courts applied to the taking question was the "invasion" test. This test interprets the fifth amendment literally: it

68. See text accompanying notes 32-36 supra.
70. Where would such colossal sums of money come from? Taxation? A population which, at its present state of ignorance, would barely tolerate the idea of such comprehensive regulation in the first place, is unlikely to voluntarily assume the monumental financial burdens necessary to pay for it. The more immediate practical realities aside, the design of such a compensation scheme poses some serious problems. If the requisite funds were derived from income taxation we would have the interesting spectacle of requiring those who have nothing (in the sense of ownership of real property) to pay those who own real property to cease ruining the environment in which all must live. If real property taxation were the source of the needed revenues, additional unfairness would ensue because those who make ecologically acceptable use of their land would have to sustain a loss to compensate those who in this context are the wrongdoers. Of course, neither of these scenarios may be any more ridiculous than the one which currently obtains, as at least one commentator has recognized: "Government then, has been in a twilight zone created by traditional notions of property interests in land. It can only prevent harmful development through the anomaly of having to buy back at commercial prices land it once gave away for free." Large, This Land is Whose Land? Changing Concepts of Land as Property, 1963 Wis. L. Rev. 1039, 1049 [hereinafter cited as LARGE].
72. Mugler v. Kansas, 123 U.S. 623 (1887). The Court held that a regulation prohibiting the manufacture and sale of liquor did not constitute a taking in part because
requires that the government engage in some actual, affirmative use of the property in question, or in the appropriation of a possessory interest, before a taking results. While this test has been supplemented by others, it has enjoyed fairly recent application. In fact, the invasion theory is always applied in the positive sense, in that the courts have never denied compensation for physical takeover of an individual's property, however inconsequential.

The invasion theory has more often been employed as a basis for denying recovery on the grounds that no appropriation of a property interest or use of the property by the government has transpired. These cases often illustrate the shortcomings of the invasion theory. For example, two landowners may suffer in substance the same injury due to the proximity of an airport—one may be granted recovery because his property was overflown and the other denied recovery where there was no overflight.

From the standpoint of compatibility with far-reaching land-use controls, the invasion theory is at first glance somewhat attractive. Its exclusive application would allow the most stringent preventive and remedial measures without requiring the payment of compensation. However, since the invasion theory does not recognize the paramount importance of ecologically sound land use planning, its use could as easily condone environmental predation as environmental sanity, since it contains no inherent limitations on the uses of land which government may sanction by zoning. Nothing intrinsic to the invasion theory at its present stage of development would inhibit the zoning of wetlands for landfill or primary dunes for parking lots.

there was no appropriation of property for the public benefit, merely a limitation of the owner's use of the property in order to protect the community from injury. Justice Brandeis also favored this view in his dissent in Pennsylvania Coal v. Mahon, 260 U.S. 393, 418 (1922), in which he would have refrained from finding a taking partly in view of the fact that the government had not asserted a proprietary interest in the property.

73. See, United States v. Causby, 328 U.S. 256 (1946), allowing recovery by a chicken farmer for loss occasioned as a result of overflights of his property from a military airport on the theory that the government had essentially taken an easement "of flight in the public highway" over the property. See also, Griggs v. Allegheny County, 369 U.S. 84, 1 ERC 1058 (1962).

74. Professor Michelman cites the example of a sidewalk which marginally encroaches upon privately owned land. Michelman, Property Utility and Fairness: Comments on the Ethical Foundations of "Just Compensation" Law, 80 HARV. L. REV. 1165, 1185 (1967) [hereinafter cited as MICHELMAN].


76. See United States v. Causby, and Griggs v. Allegheny County, supra note 73 (recovery allowed where overflights have occurred); Batten v. United States, 306 F.2d 580 (10th Cir. 1962), cert. denied, 371 U.S. 955 (1963); Leavell v. United States, 234 F. Supp. 734 (E.D.S.C. 1964) (no recovery in the absence of overflights).

77. An ideal takings test from an environmental point of view should not only
The invasion theory is not the only one which the courts have applied to taking problems. Where no physical invasion or outright appropriation has occurred, the courts have nonetheless often found that a taking has resulted from government attempts to control land use.

The nature of the proscribed activity is often considered relevant in determining whether a given restriction constitutes a valid exercise of the police power. If the prohibited use is one which might run afoul of the common law nuisance maxim, *sic utere tuo ut alienum non laedus,* its proscription may not require compensation. The rationale of the cases in this area is that the paramount interest in public health and safety justifies the restriction on the landowner's use, even though it may cause him to sustain substantial economic losses or deny him any profitable use of his land.

There is also a line of reasoning to the effect that the legislature may validly choose to protect one property right at the expense of another, if the public interest requires it. Hence, in *Miller v. Schoene,* the Supreme Court upheld a statute requiring the destruction of all cedar trees infected with cedar rust located within a prescribed radius of apple orchards: "[F]orced to make such a choice, the state does not exceed its constitutional powers by deciding upon the destruction of one class of property in order to save another which, in the judgment of the legislature is of greater value to the public." An analogous line of reasoning holds non-compensable the destruction of private property for security purposes in times of imminent peril.

enable government to proscribe private land-use which is ecologically harmful, but should also make it difficult for government to participate in or sanction such a use. Environmental concerns have generally been given scant attention in eminent domain proceedings. For a discussion of this point, see Calvani, *Eminent Domain and the Environment,* 56 Cornell L. Rev. 651 (1971).

78. Use your own property in such a manner as not to injure that of another.

79. In Village of Euclid v. Ambler Realty, 272 U.S. 365, 387-88 (1926), the Court, in sanctioning comprehensive zoning for the first time, recognized that "the law of nuisances, likewise, may be consulted [when considering the validity of a particular zoning ordinance] not for the purpose of controlling, but for the helpful aid of its analogies of ascertaining the scope of, the [police] power."

80. See Hadacheck v. Sebastian, 239 U.S. 394 (1915), in which the Court sustained an ordinance prohibiting the operation of a pre-existing brickyard in a residential area on the grounds that emissions from the plant constituted a health hazard, despite petitioner's claim that the land was unsuitable for any other use (due to excavations) and that a reduction in its value from $800,000 to $60,000 would result. See also Consolidated Rock Products Co. v. City of Los Angeles, 57 Cal. 2d 515, 370 P.2d 342, 20 Cal. Rptr. 638, appeal dismissed, 371 U.S. 36 (1962), upholding the proscription of the operation of a gravel pit for similar reasons and to similar effect.

81. 276 U.S. 272 (1928).

82. Id. at 279.

83. See, e.g., United States v. Caltex, Inc., 344 U.S. 149 (1952) holding the demolition of an oil company's plant by the Army to prevent it from falling into enemy
As a tool for achieving ecologically sound land use, the reasoning of the noxious use and less-favored use cases leaves much to be desired. To be sure, there is language which could be used to argue that ecologically-motivated regulations are of the non-compensable variety. Just as the court in *Miller*\(^4\) upheld the legislature's determination that the furtherance of the public good necessitated the destruction of infected cedar trees to protect more important apple orchards, arguably legislatures may protect the public good by prohibiting a landowner from using his property in a manner for which it is inherently unsuited, thus preventing ecological damage harmful to society. *U.S. v. Caltex*\(^5\) could also be extended by arguing that the environmental degradation resulting from contemporary land use practices constitutes an imminent peril which justifies the destruction of the private rights involved. Neither of these arguments is, however, likely to be successful.

The problem with these tests is that common law nuisance theory developed in times of almost total ignorance of environmental constraints. Certainly many environmentally unsound activities would not be held to be nuisances under the current state of the law.\(^7\) There are two reasons for this. First, the external or visible impacts of any particular land use practice may be too diffuse to be identified as nuisances, either because those who suffer are not cognizant of the source or nature of their loss, or because such harms, even if recognized and pursued to their source, are not the kind of "substantial" interferences with the use and enjoyment of private property which have been traditionally recognized as nuisances.\(^8\) Professor Sax has urged the courts to recognize that these diffuse harms impinge upon "public rights."\(^9\) While this would be consonant with ecological reality, it is not the state of the law. Second, the courts, have generally ignored the potential cumulative impact upon the environment if all property owners who find a particular use attractive should indulge in it. Any attempt to treat individual land use decisions as unrelated phenomena denies ecological reality and leads to an inaccurate evaluation of the social harm which could result. While the effects of black-topping one acre of prime agricultural land may well be *de minimis*, even insofar as "public

\(^{84}\) 276 U.S. 272 (1928).

\(^{85}\) 344 U.S. 149 (1952).

\(^{86}\) It is hard to imagine, for example, a common law court holding that building a hamburger stand on a primary dune or a subdivision on prime agricultural land constitutes or resembles an actionable nuisance.

\(^{87}\) PROSSER, *supra* note 64, at 598.

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rights" are concerned, the effects of paving 10,000 acres are clearly of another magnitude.

It appears, therefore, that the noxious use and less-favored use theories as presently constituted are unsatisfactory from the standpoint of facilitating ecologically sound land use planning. However, the principle upon which they rest, that no one should have a right to use his property to the injury of his fellows, could furnish the basis for a more ecologically sensitive takings theory.

Contemporary takings law interposes another obstacle in the path of rational land use control: the diminution of value theory first enunciated by Justice Holmes in Pennsylvania Coal Co. v. Mahon. The primary focus of the diminution of value test has been upon the loss experienced by the individual landowner as a result of regulation, rather than the detriment the public will experience if the landowner is allowed to proceed unhindered. This is so even though Mahon itself contains language suggesting that extensive regulation may be acceptable if supported by powerful public policy considerations. The point at which diminution becomes a taking is usually held to be the point at which the landowner is deprived of any "profitable" or "reasonable" use of his property. The application of this test has been instrumental in several recent decisions holding environmentally-based regulations to be compensable takings. It has also been directly incorporated in the wetlands statutes of some states.

Though often cited, the diminution of value/deprivation of use test has not won universal acceptance. Cases involving nuisance-like uses

89. "As long recognized, some values are enjoyed under an implied limitation and must yield to the police power. But obviously the implied limitation must have its limits or the contract and due process clauses are gone. One fact for consideration in determining such limits is the extent of the diminution." 260 U.S. 393, 413 (1922).

90. "When it [the diminution in value occasioned by regulation] reaches a certain magnitude, in most, if not all cases there must be an exercise of eminent domain and compensation to sustain the act. So the question depends on the particular facts." Id. (emphasis added). The Court further stated that "the statute does not disclose a public interest sufficient to warrant so extensive a destruction of the defendant's constitutionally protected rights." Id. at 414.


92. See State v. Johnson, 265 A.2d 711, 716 (Me. 1970), in which the court found the state wetlands statute unconstitutional as applied to the plaintiffs as it operated to deprive them of "any reasonable use of their property," which was left with "no commercial value whatever;" Comm'r of Natural Resources v. S. Volpe & Co., 349 Mass. 104, 206 N.E.2d 666 (1965) (state wetlands statute); Dooley v. Town Plan & Zoning Comm'n, 151 Conn. 304, 197 A.2d 770 (1964) (combination wetlands and floodplain ordinance).

93. See, e.g., ME. REV. STAT. ANN. tit. 12, § 4704 (Supp. 1972) (reasonable use); MASS. ANN. LAWS ch. 130 § 105 (Supp. 1971) (practical use).
have upheld regulations which resulted in severe diminutions in value and permissible uses by focusing upon the potential harm to the public interest from allowing the use, rather than the loss experienced by the landowner as a result of regulation.  

Several commentators have noted the apparent difficulties in the application of this test. If the degree of diminution in value is the determinative factor, then the owner of a small parcel worth a few thousand dollars may be entitled to compensation if a particular regulation operates to deny him any economic use, while the owner of a tract worth several hundred thousand dollars may be required to sustain a loss equal in dollar amount to many times the value of the smaller parcel, so long as his tract retains some practical use or market value.

The diminution test is also fraught with definitional problems, for in order to determine the degree of diminution we must precisely define the "property" at issue. If a given regulation effectively deprives a landowner of any use of part of a given tract, does this constitute a total and, hence, compensable taking of the given part, or merely a proportional, noncompensable diminution of the tract as a whole?

The diminution test is woefully deficient from an ecological standpoint. It assumes that the right to compensation and, in many instances, the right to pursue a given use should be determined solely by the examination of the economic effects of regulation on one piece of property. This intrinsic flaw is exacerbated by the practice of including the "development" value of a particular piece of property in computing the degree of diminution. Nonetheless, in cases which do not involve

94. See, e.g., Goldblatt v. Hempstead, 369 U.S. 590 (1962) (upholding a town ordinance prohibiting excavation below the water table and requiring refill of any excavation permanently below that level); Turnpike Realty Co. v. Town of Dedham, 284 N.E.2d 891 (Mass. 1972), cert. denfd 409 U.S. 1108 (1973) (upholding the validity of a zoning by-law establishing a floodplain district, although the result was an alleged diminution of 88% in the value of the plaintiffs' property). Both of these cases appear to sanction a balancing test in which the diminution suffered by the plaintiff is somehow weighed against the harm to the public which would result in the absence of regulation. See also, Consolidated Rock Products v. City of Los Angeles, 57 Cal. 2d 515, 370 P.2d 342, 20 Cal. Rptr. 638, appeal dismissed, 371 U.S. 36 (1962).

95. Michelman, supra note 74, at 1192. Professor Michelman also notes that the diminution of value test is not applied to actual physical takeovers of property, however harmless, thus leading to the seemingly anomalous situation in which a landowner must be compensated for government action which causes him no appreciable economic loss (e.g., a marginally encroaching sidewalk) while being required to suffer substantial losses flowing from regulations which do not involve a physical intrusion. Id. at 1190-91.

96. Sax, Takings and the Police Power, 74 YALE L.J. 36, 60 (1964) [hereinafter cited as POLICE POWER]. Professor Sax has also criticized the diminution test as inconsistent with the early history of the compensation principle, which he sees as originally designed as a safeguard against unfair imposition of loss by tyrannical means, not as a protector of the economic status quo. Id. at 57.

97. For a discussion of this point, see Large, supra note 70, at 1048-49.
physical invasion, outright appropriation, or the prohibition of nuisance-like uses, this test still enjoys regular application.

Based upon this brief examination of current takings law, it is asserted that the courts have been unable to arrive at a satisfactory answer to the taking question. This is true even though they have generally ignored ecological issues of critical importance which would have further complicated their efforts. Is it possible to articulate a takings theory which can foster ecological sanity without requiring the abolition of private ownership of real property?

One distinguished commentator who believes it is possible is Professor Joseph Sax, originator of the "spillover" theory of taking. Under this theory, the critical factor in determining whether a given regulation is a legitimate exercise of the police power or a compensable taking is the extent to which the existing (or proposed) use of the property in question involves some imposition ("spillover") on neighboring property. Sax recognizes three types of spillover effects:

The first and most obvious example of this situation is that in which my use of my land results in a physical restriction of the uses that may be made of other land, such as the mining of coal which results in drainage on lower-lying land.

A second type of spillover effect is the use of a common to which another landowner has an equal right, such as the dumping of water from industrial use into a stream upon which a landowner downstream depends for water supply.

* * *

There is yet a third, less physical, kind of spillover effect. It is the use of property that affects the health or well-being of others, such as the treatment of land with toxic substances that results in the death of wildlife, or a use of property that imposes an affirmative obligation on the community such as residential development in a remote area that would require the furnishing of police protection.

Uses which fall within the purview of these definitions could be restricted without compensation, while those uses which do not involve a spillover would still be constitutionally protected and could be restricted only upon payment of compensation. Accordingly, the legislature would weigh the private interest sought to be restrained against

98. Sax, supra note 88.
99. Id. at 162.
100. Id. at 161-62.
101. Id. at 163.
102. Id. Sax states that the relevant value of the property would be that of the highest and best use that could be made without producing spillover effects.
any competing private interest and "public rights." The central objective guiding the legislature’s efforts would be “the maximization of the entire resource base.”

While Sax respects ecological reality and recognizes the undesirable resource utilization which results from current takings law, the spillover theory as presented is incomplete from the standpoint of ecologically sensitive land use planning. Sax condemns the folly of determining the right to compensation by examining the economic impact of regulation upon the regulated property only, and advocates the recognition of diffusely held public rights. But he does not expressly acknowledge the potential cumulative impact of individual land use decisions as a relevant factor in an acceptable takings principle. Uses which individually have no readily discernable spillover effect may, in the aggregate, have a substantial environmental impact. The spillover theory could accommodate this additional factor, but its incorporation would markedly alter the theory’s application.

Furthermore, the ecological reality described in Part One supports the view that every land use decision has some spillover effect. This effect can be positive, as when land is utilized in a manner consistent with its inherent physical nature and is thus allowed to remain a harmonious part of the ecosystem, or it can be negative, as when land is utilized in a manner for which it is inherently unsuited.

103. Id. at 171-72. Sax sees the legislature as well-suited for such conflict resolution in view of its theoretical accessibility to competing claims and the political checks on the decision-making process. Id. at 171. In view of the beating public rights have traditionally taken in the legislatures at the hands of special interests, this would seem to bode ill for environmentally sensitive reforms.

104. Id. at 172. Sax further elaborates upon this point by noting that “the proper decision as to competing property uses which involve spillover effects is that which a rational single owner would make if he were responsible for the entire network of resources affected, and if the distribution of gains and losses among the parcels of his total holding were a matter of indifference to him.” Id.

105. “The point is that the ecological facts of life demonstrate a powerful inextricability in the utilization of natural resources. If we wish to cope intelligently with the use of resources, we must focus attention on the nature and degree to which the consequences of any use are disseminated across property, state, and even national boundaries.” Id. at 155.

106. “Requiring compensation when a conflict among competing users is resolved in favor of diffuse interest-holders, and not when it is resolved against them, inevitably skews the political resolution of conflict over resource use and discriminates against public rights.” Id. at 160.

107. Id. at 152.

108. See text accompanying notes 81-85 supra.

109. Indeed, even where the use of land is in accord with its inherent characteristics, the manner in which the use is pursued may produce inimical spillover effects. Sax sees farming as an activity which ordinarily involves no spillover effects. Sax, supra note 88, at 165. Farming by conventional methods is unfortunately rife with those effects, however, even where pursued on agricultural land. See note 5 supra.
to recognize the fundamental principle, that ecologically sensitive land-use control mandates uses consistent with the inherent nature of the land, makes the spillover theory as presently constituted a double-edged sword. It is possible under the present theory for a legislature to allow strip mining and prohibit contiguous residences, or vice versa, regardless of the inherent suitability of the land for either use. This is so because each imposes a spillover demand upon the other, the residences by demanding freedom from drainage and the mining operation by demanding drainage rights. Sax sees no theoretical sense in which either of these competing uses may be superior to the other.

The point is that there is a fundamental theoretical way in which uses may be ranked. Those uses which are consistent with the inherent physiographic nature of the land are superior to those which are not. The spillover theory, if augmented by this principle, can furnish the basis for an ecologically sensitive takings standard. The first step in the formulation of such a standard would be to refuse to recognize a property right on the part of any landowner to use his property in a manner for which it is inherently unsuited due to its physiographic nature. Any such use would be classified as a negative spillover use which could be proscribed without compensation. Any regulation which operated to proscribe a use consistent with the physiographic

110. Sax, supra note 88, at 162-63.
111. Id. at 163.
112. See note 32, supra, and accompanying text.
113. At least one court may be headed in this direction. The Supreme Court of Wisconsin, in Just v. Marinette County, 56 Wis. 2d 7, 201 N.W.2d 761, 4 ERC 1841 (1972), upheld the constitutionality of a county shoreland zoning ordinance which required that the plaintiff obtain a permit before filling portions of his property, classed as "wetland" under the ordinance, choosing to focus upon the harm to the public which would flow from the plaintiff's actions rather than upon the economic detriment incurred by the plaintiff as a result of the restriction. The court thus viewed the regulation as an attempt to prevent a public harm and therefore as a valid exercise of the police power, and not as an attempt to secure a public benefit at the plaintiff's expense, a situation which the court would have held mandated compensation. Id. at 16-17, 201 N.W.2d at 767-68, 4 ERC at 1841. The court took a new look at the property rights of landowners, stating that: "An owner of land has no absolute and unlimited right to change the essential natural character of his land so as to use it for a purpose for which it was unsuited in its natural state and which injures the right of others. The exercise of the police power in zoning must be reasonable and we think it is not an unreasonable exercise of that power to prevent harm to public rights by limiting the use of private property to its natural uses." Id. at 17, 201 N.W.2d at 767-68, 4 ERC at 1841. While a careful reading of the case does not suggest that the court presently recognizes that all physiographic land types have inherent and individual use-potential characteristics and would be willing to extend its opinion accordingly, it does demonstrate a level of perceptivity sufficient to indicate that such an argument would be seriously considered. For a further discussion of this case, see Biunno, Environmental Law—Wetland Fill-Restrictions do not Constitute a Compensable "Taking" Within the Meaning of the Fifth Amendment—Just v. Marinette County, 4 SETON HALL L. REV 662 (1973), and Large, supra note 70, at 1074-81.
nature of the land would constitute a compensable taking, the landowner being entitled to the value of the highest ecologically consistent use for which the property is suited. This type of takings theory would have a further advantage in that it would not appear to facilitate governmental land use decisions which would have adverse ecological effects. A regulation which sought to proscribe a use of land on the basis that the proscribed use would be one for which the land was inherently unsuited would certainly be held to be an unreasonable exercise of the police power if it, in turn, would substitute another ecologically unsound use.

Admittedly, this suggestion may raise as many questions as it answers. It is well suited to facilitate the promulgation and implementation of comprehensive, ecologically sound land use planning, but even the most ardent proponent of such a program must recognize that there are likely to be many intermediate stages in even the most expeditious progression toward that end. What of situations in which the exigencies of the future necessitate the resolution of a conflict between competing uses, both of which entail a negative spillover effect in the newly defined sense? Perhaps Professor Sax may once again have furnished the basis for the answer in his suggestions concerning conflict accommodation. The proper decision in such a situation might be that which would be made by a rational single immortal owner of the entire resource network if the distribution of gains and losses among the parcels of his total holdings throughout time were a matter of indifference to him.

Finally, would the government's newly acquired powers to proscribe ecologically unsound uses enable it to carry out the positive, coordinated resource management necessitated by the exigencies of the near future? Or will the market system, operating within the parameters of the proposed constraints, effectuate an efficient pattern of land use?

CONCLUSION

These are the kinds of questions we must seek to answer if we are to make a sane use of our resources. No matter how we answer the questions, it seems clear that if the legal system is to reflect what we now know of ecological reality, some concepts heretofore regarded as "individual rights" will have to be abandoned in the name of group survival. Among those sure to protest will be the proponents of individualism, who will insist that "no ideology, however noble, can justify the sacrifice of an individual to the needs of the group." This argument is a

114. Supra note 104.
denial of interdependence in that it ignores the fact "that the individual is sacrificed either way. If he is never sacrificed to the group, the group will collapse and the individual with it."

Others will insist that to ask such questions, regardless of their logical relevance, is an exercise in futility which should be foregone for more practical endeavors, such as ascertaining what illusory measures the public will currently tolerate in the way of change. To argue thus is to assume that the state of our collective consciousness is unchangeable, whereas it is in fact ever-changing. Whether we are flexible enough to sustain the dramatic and comprehensive changes which are necessary remains to be seen. The answer may lie in our willingness to try.

116. Slater, supra note 2, at 27.