

THE LAW OF PROPERTY

Without any necessity to resort to abstract notions of justice, or the obscurity of historical origin, many writers have maintained that property is nothing more than an invention of the law.

Banish governments . . . and the earth and all its fruits are as much the common property of all mankind as the air and the light. According to primitive natural right, no one has an exclusive right to anything, but everything is a prey for all . . . Hence . . . the right of property, and, generally speaking, every right must spring from public authority.⁵⁶

As men have renounced their natural independence to live under political laws, they have also renounced the natural community of goods to live under civil laws. The former laws give them liberty, the latter property.⁵⁷

Much like the problem of which came first, the chicken or the egg, it appears that the notion of property must precede the law which regulates it, yet it is law in some form which gives rise to the notion of property. Legal recognition of individual claims to property ownership, legal definition of those claims, and provision of the legal means to secure private interests, are at the foundation of the economic organization of modern society.

Inquiry into the law of property, however, requires investigation of the fundamental philosophical concepts upon which rest that social instrumentality, the object of which is to protect the application of personal wealth and individual effort to private uses. Property exists to be owned and its significance as a social institution is largely exhausted in the relation of ownership.⁵⁸

56. Jacques Benigne Bossuet (1627-1704), quoted by Louie Victor de Laveleye, *The Theory of Property*, in RATIONAL BASIS OF LEGAL INSTITUTIONS, at 174 (1923).

57. Montesquieu, quoted by Laveleye, *supra* note 56, at 174.

58. The right I have to my property, to my possessions is derived from physical, from natural acts: being derived from natural acts it is a natural right: being derived from nature it is not derived from law: its origin, its existence was antecedent to law: for nature existed before law. Being antecedent to law, it was not created by law: not being created by law it cannot be taken away by law. Law was instituted to protect a man in the enjoyment of such his rights, not to deprive him of them, or of any part of them: these rights like all other natural rights are sacred and indefeasible. So far as it protects him accordingly, it is conformable to natural justice: so far as it deprives him of such his

The theory of property interests grew up in the law to answer an economic need. The instrumentality by which society assured that the application of personal wealth and effort to particular individual or social uses would be protected was the law of property. In many communities, however, the economic need that was once satisfied by the law of property as it now seems to exist is undergoing profound alteration. It is evolving as an institution of society and the direction of its evolution is being determined by principles of human ecology.⁵⁹

rights or any part of them it is repugnant to natural justice. Laws conformable to natural justice are valid, and ought to be observed: laws repugnant to natural justice are ipso facto void, and instead of being observed ought to be resisted. Those who make them are tyrants, those who attempt to enforce them are the tools of tyrants: both the one and the other ought to be resisted, made war upon and destroyed.

Of rights thus self-evident the existence requires not to be proved but only to be declared: to prove it is impossible because the demonstration of that which is self-evident is impossible: to doubt of it argues of want of sense: to express a doubt of it argues not only a want of sense but a want of honesty.

Property the creature of law?—Oh, no—Why not? because if it were the law that gave every thing, the law might take away every thing: if every thing were given by law, so might every thing be taken away.

The case is that in a society in any degree civilized, all the rights a man can have, all the expectation he can entertain of enjoying any thing that is said to be his is derived solely from the law. Even the expectation which a thief may entertain of enjoying the thing which he has stolen forms no exception: for till it is known to have been stolen the law will as fully protect him in the enjoyment of it, as much as if he had bought or made it.

[I]n the rudest and earliest state therefore of society whatever property a man possesses, whatever articles of property he expects to have the enjoyment of, his possession if derived from any source more permanent than the casual forbearance of those in whose presence he has occasion to find himself, must be derived from a principle which can be called by no other name than *law*. Relations purely physical might then as now generate an expectation of this kind for a moment and in a weak degree: but an expectation in any degree strong and permanent can only be derived from law. Till law existed, property could scarcely be said to exist. Property and law were born and die together. Till there was law there was no such thing as property: take away law and property is at an end.

J. Bentham, *The Limits of Jurisprudence Defined*, A BENTHAM READER, at 152-53 (M.P. Mack ed. 1969).

59. Ecology is often characterized as the scientific study of the "web of life." Man can be found somewhere in that web, either as spinner or unwilling captive, and there has been much written about man's "place in nature." As a modern science, Ecology deals with organisms in their environment and with the processes that link organisms and their habitats.

Ecology, however, is more than the study of any organism in its environment, it is the integrated study of organisms and their environment. Ecology involves consideration of the prerequisites of human existence on earth: the essential physical and chemical factors, food, and energy. Ecology as an integrative discipline provides a framework within which seemingly disparate human activities can be seen in relationship to each other; although the vision is less than clear at times in relation to the whole of life.

The study of the relationships among different organisms and between organisms and their environment has resulted in the description of various biogeochemical cycles which provide a convenient way of modeling very complex systems. The most nearly perfect cyclical processes are those involving water and nitrogen, while the least cyclical processes are those in which material is removed from the continents and deposited in the permanent basins of the ocean.

While individual ecologists may work on only one problem at a time and their working view of ecology may be quite limited in scope, the ideas and concepts that are the consequence of their individual work fit together to build an intellectual construct of greater dimension and significance. What ecologists are about is no less than building an understanding of the role of living things within the structure and function of the universe. Although there is a discipline

Private property must now be considered as just another element of those natural, social, societal and economic systems⁶⁰ the interac-

in sociology designated Human Ecology, it has dealt mostly with urban geography and population demographics. In 1969, Paul Shepard observed that

Ecology . . . as such cannot be studied, only organisms, earth, air, and sea can be studied. [Ecology] is not a discipline: there is no body of thought and technique which frames an ecology of man. It must be therefore a scope or a way of seeing. Such a perspective on the human situation is very old and has been part of philosophy and art for thousands of years. It badly needs attention and revival.

P. SHEPARD, *THE SUBVERSIVE SCIENCE: ESSAYS TOWARD AN ECOLOGY OF MAN* (1969).

The constant feedback between man and environment inevitably implies a continuous alteration of both. However, the various aspects of biological and social nature constitute such a highly integrated system that they can be altered only within a certain range. Neither physico-chemical concepts of the body machine nor hopes for technological breakthroughs are of use in defining the ideal man or the proper environment unless they take into consideration the elements of the past that have become progressively incarnated in human nature and in the human societies, and that determine the limitations and the potentialities of human life."

R. DUBOS, *SO HUMAN AN ANIMAL* (1968).

The fundamental and basic concepts of animal ecology are also the fundamental and basic concepts of human ecology. The laws of Nature apply to the human species as they do to animals. Mankind cannot ignore the dynamic forces of the environment with impunity.

While many philosophers, most notably John Locke, have supported the concept that all who are free are free to take freely from that which nature has provided for all, their positive statement of philosophical principle always assumed the implicit ethical and later equitable injunction, so long as no damage is done to the rights of others similarly free. Unfortunately, the Industrial Revolution and the rise of modern economics and the philosophy of materialism have led the corporate oligarchy of the industrial world to ignore the equitable maxim, "so use your own property as not to injure the property of others," particularly that which is the property of all human beings, not only during this, but succeeding generations: the air we breathe, the water we drink, and the land and other non-renewable natural resources which are the source of our food and clothing.

There is no question that much of the mineral law of the United States and the appropriation doctrine applicable to water rights in the western United States are direct extensions of Locke's theory of labor as the primary source of title to property. A theory which was eventually to be incorporated in a labor theory of value and come to be used in a way that its author never envisioned. Locke himself objected to the proposition that if gathering the fruits of the earth confers a right to them, anyone may amass as much as he likes, by answering "Not so. The same law of nature that doth by this means give us property, does also bound that property too." As for land, the doctrine that labor gives title to property sets the limit to the amount of property that can be acquired. "For as much land as a man tills, plants, improves, cultivates and can use the product of, so much is his property."

60. In environmental land use planning and resource management, considerable emphasis is placed on the need to understand the system of interacting elements or component parts of the social, economic and natural environments. Environmental systems analysis demonstrates the extent of the overall impact on the environment of a region (The Regional Environmental System, see note 61, *infra*) which can be expected from any alteration, modification or disturbance of any particular system or system element.

Systems analysis is a method for studying, or in the first instance determining, relationships among elements of interdependent systems which can be considered as sets (in the mathematical sense of a collection or aggregation of objects or events) because they behave as a unit; are involved in a single process, or contribute to a single effect.

The principle reason for using systems analysis in ecology, economics and more recently, the social sciences is the complexity of environmental systems originating from a variety of causes: number of variables; number of different types of variable; different levels of organization of systems (populations, communities, trophic levels, biogeochemical cycles) and the nonhomogenous and nonuniform distribution of system elements throughout time and space.

tions among which establish the Regional Environmental System⁶¹ in which the property may be located at the moment of concern or define the region, in space and time, throughout which the effects of its use can be perceived.⁶²

According to Hume⁶³ there is need of a convention entered into by all the members of the society to bestow stability on . . . possession of . . . external goods, and leave everyone in the peaceable enjoyment of what he may acquire by his fortune and industry . . . it is by that means we maintain society. . . .⁶⁴

61. Before the Regional Environmental System can be defined, the word "environment" which has become so common must be precisely defined since it has come to mean different things to different people. "Environment" should be defined in the broad sense now accepted by environmental systems scientists after a series of courtroom tests which began in 1966 with the first challenge to DDT as an environmental toxicant, *Yannacone v. Dennison*, 55 Misc. 2d 468, 285 N.Y.S.2d 476 (1967), and tested during hearings before the Wisconsin Department of Natural Resources, [1968] No. 3 DR-1, and in the federal courts during the *Project Rulison* litigation, *Crowther v. Seaborg*, 312 F. Supp. 1205 (D. Colo. 1969).

Environment is the word used to represent the complex System established (in the mathematical sense) by the union of the sets of natural, social, economic and societal resources existing in a region; and the set of all interactions among those resources; and the sets of natural, social, societal and economic processes operating within or upon the region.

See V.J. Yannacone jr., *Environmental Law/Environmental Systems Science: Interaction at the Interface in Litigation and Legislation*, ENVIRONMENTAL SYSTEMS SCIENCE, at 191-326 (V.J. Yannacone jr. ed. 1975).

62. One of the most valuable results of a comprehensive definition of "Environment" is the ease with which the region within which the potential for liability resulting from the use of property must be evaluated. See, V.J. Yannacone jr., *Environmental Auditing*, ENVIRONMENTAL LAW: PRACTICE AND PROCEDURE HANDBOOK, at 165-76 (1976).

63. Locke combined acceptance of the principle that all our ideas arise ultimately from experience with a modest metaphysics. Berkeley, though he carried empiricism further than Locke by rejecting the concept of material substance, utilized empiricism in the service of a spiritualist metaphysical philosophy. The task of completing the empiricist experiment and presenting an uncompromising antithesis to continental rationalism was reserved for David Hume.

Hume contended that there can be a convention or agreement between people although no explicit promises are ever made, and in speaking of the convention from which he contends the ideas of justice, property and right arise, illustrates the "common sense of interest" which is expressed in action rather than in word with this example, "Two men, who pull the oars of a boat, do it by an agreement or convention, tho' they have never given promises to each other." D. HUME, A TREATISE OF HUMAN NATURE, at Book 3, V.2 § 2 (1888).

64. However, Hume does not mean that there is a right of property which is antecedent to the idea of "justice." A "general sense of common interest" expresses itself in the general principles of justice and equity, in fundamental laws of justice; and "our property is nothing but those goods whose constant possession is established by the laws of society; that is, by the laws of justice. . . . The origin of justice explains that of property. The same artifice gives rise to both." Justice, therefore, is founded on self-interest, on a sense of utility. And it is self-interest which gives rise to what has been called the "natural obligation" of justice. To Hume, "public utility is the sole origin of justice." D. HUME, INQUIRY CONCERNING THE PRINCIPLES OF MORALS, at Book 3, V.1, § 145.

Left to themselves, individuals could not provide adequately for their needs as human beings. According to Hume, organized society came into being because of its utility to mankind. It is a remedy to the inconveniences of life without society.

By the conjunction of our forces, our power is augmented: by partition of employment, our ability increases; and by mutual succour we are less exposed to fortune and accidents. It is by this additional force, ability and security that society becomes advantageous."

While Hume believed that it is self-interest alone which drives men into society, he recognized that disturbances inevitably arise in any society if there are no conventions establishing and regulating the rights of property.

With the rise of socialism as the form of government in many areas of the world today,⁶⁵ one of the most vexing questions in philosophical jurisprudence becomes how to rationally account for the so-called "natural" right of property while fixing the "natural" limits to that right.

Recognizing the existence of certain fundamental ethical or moral principles gives direction to change and tempers the imperatives of operational necessity during each epoch of human history, and the course of evolution for this "natural" law as an element of modern jurisprudence clearly shows that the guidelines for its interpretation must be found in the context of the needs of human society at the particular period in history. Just as many evolutionary biologists have noted that to a certain extent "ontogeny recapitulates phylogeny"⁶⁶ in many living systems, so the interpretation of the "natural law" inevitably reflects the historical circumstances of each previous stage of its development.

Since the Middle Ages, the natural law has been a weapon in the attack on totalitarianism whether by church or state. While the very existence of a "natural" law promotes stability in society by postulating the existence of some rational system or organizational framework capable of human perception which can serve as a structure for the positive law at any time, the capacity of a "natural" law to accommodate the changes which occur during the course of societal evolution has served to protect individuals from the personal injustice and the arbitrary administration of executive whim.⁶⁷

D. HUME, A TREATISE OF HUMAN NATURE, at Book 3, V.2, § 2 (1888). This utilitarian element was later developed by Bentham and the two Mills.

65. Socialism may be defined as the policy or theory which aims at securing by the actions of a central democratic authority a better distribution of wealth, through control of production, than is alleged to prevail under a capitalist system of free, unfettered enterprise. For an interesting analysis of Socialism and its impact on today's world, see M. HARRINGTON, SOCIALISM (1973).

66. The oft-quoted "theory of recapitulation," or "biogenetic law" propounded by the German naturalist Ernst Heinrich Haeckel (1834-1919) states that an individual organism in its development (ontogeny) tends to recapitulate the stages passed through by its ancestors (phylogeny). More accurate are the "laws" of embryonic development proposed by Estonian embryologist Karl Ernst von Baer (1792-1876): (1) General characteristics appear before specialized characteristics in the development of an individual organism; (2) From the more general, the less general and finally the specialized characteristics of an organism develop; (3) Each animal during its development departs progressively from the form of other animals; (4) The young stages of any animal are like the young or embryonic stages of other animals lower in the evolutionary scale, but not like the adults of those animals. Haeckel's views, however, are not entirely indefensible, although he should be remembered as the man who first used the term ecology to refer to the study of living organisms in relation to one another and to the inanimate environment. He also believed that psychology should be considered but a branch of physiology.

67. If justice is defined as all forms of rightful action, then at least two forms of justice may be distinguished. Natural justice, which is the idea of

This natural law was variously conceived: sometimes as a vaguely outlined ideal order of society; sometimes as a body of moral ideals to which conduct should be constrained to conform; sometimes as a

justice as it is, in truth, and positive justice which is that conceived, recognized and expressed, more or less incompletely, inaccurately and imperfectly, by civil authority in the form of legislated or mandated positive law. The term "positive" in this sense meaning established by some form of human authority.

The general and universal precepts of the natural law are a fundamental law, a law of laws, which originates in the nature of humanity and should always be the rational, social, and moral norm or standard for positive law if law is to be:

... the bond which secures our privileges in the commonwealth, the foundation of our liberty, and the fountainhead of justice. Within the law are reposed the mind and heart, the judgment and the conviction of the state. The State without law would be like the human body without a mind—unable to employ the parts which are to it as sinews, blood and limbs. The magistrates who administer the law, the judges who interpret it—all of us in short—obey the law to the end that we may be free.

Cicero, *In Defense of Cluentius*, ORIGINS OF THE NATURAL LAW TRADITION, at 21 (1954).

Much of the difficulty in recognizing the natural law as an acceptable element of Anglo-American jurisprudence can be attributed to the rise of logical positivism as a philosophical system during the eighteenth and nineteenth centuries. The positivists insisted that the only source of human rights was positive law, and that the positive law was independent of any natural law or universal law influence.

The positivist view of law leaves no room for equity, much less a philosophy of law which must concern itself with right, wrong, justice, and injustice. For if, as the legal positivists contend, just or unjust are identical with what is permitted or forbidden by positive law, there remains no room for any consideration for the philosophy of law, since it has all been stated by the positive law of the moment in any particular state or principality. Kelsen, who spent most of his life attempting to "purify" the law from all considerations of justice or injustice, or whether a particular law might be good or bad, summarily dismissed those concerned with such questions by accusing them of making value judgments, pursuing politics and succumbing to the evils of subjectivism. So successful was Kelsen in convincing legal scholars, jurists and leaders of the American Bar that law can become an "objective science" only by abstaining from consideration of fundamental questions of justice and injustice, morality, ethics, right and wrong, that eventually the leadership of the Corporate Bar, Big Business, and the Executive Branch of Government became inextricably inter-twined without the hinderance of any moral scruples so long as the letter of the positive law was not violated. This unholy alliance culminated in the national crisis of conscience and loss of confidence in the American legal profession during 1974. (See note 78, *infra*).

Positivism continued to dominate the philosophy of law until the end of World War II. In 1932, Radbruch provided the philosophical support for the position that the judge and jurist must disregard their sense of justice and obey the command of the law as written by the state. Thus instructed, the jurists of Nazi Germany established the "justice" of the Third Reich. The theoretical powerlessness of the German judiciary to resist the implementation of unjust laws made those judges agents for the imposition of policies such as genocide. However, the same Radbruch whose writings and teachings left German jurists impotent before Hitler, wrote in 1947—after Nuremberg:

The traditional conception of the law, [t]he positivism that for decades . . . dominated German jurists, and its teaching that "the law is the law" were defenseless and powerless in the face of such an injustice [the Holocaust] clothed in the form of the law. The followers of [judicial positivism] were forced to recognize as 'just' (Recht) even that iniquitous law. The science of the law must again reflect upon the millennial common wisdom of Antiquity, the Christian Middle Ages, and the Age of Illumination, that there exists a higher justice (Recht) than [positive law—] a natural law, a divine law, a law of reason—briefly a justice (Recht) that transcends the [positive] law. As measured [against] this higher justice, injustice (Unrecht) remains injustice, even when it is given in the form of a law. Before this higher justice also the judgment pronounced on the basis of such an unjust law is not the administration of justice but rather injustice.

G. RADBRUCH, *DIE WANDLUNG*, quoted by W. LUIJPEN, *PHENOMENOLOGY OF NATURAL LAW* at 27 (1967). It appears that legal positivism, as a justification for ignoring the natural law, was a hypothesis wrecked by the gruesome reality of history.

body of ideal legal precepts by which the precepts of positive law are to be criticized and to which, so far as possible, they should be made to conform. But whatever meaning was given to the ideal or body of ideals, the interpretation and application of existing rules of law were to be guided by it, and law making, judicial reasoning and doctrinal writing were to respect it.

The Middle Ages had been content to accept the doctrine of *suum cui que tribuere*, (render unto each that which is theirs, one of the three fundamental maxims of the law set forth by Justinian in 525 A.D.), because acquisition and private ownership of land and chattels were an accepted part of the existing social system sanctioned by political authority and supported by military force. Seventeenth and eighteenth century jurists, however, sought to derive the right of property by means of natural reason and establish that right as the philosophical justification for other institutions of society.

The disintegration of relationally organized society at the time the New World was discovered provided the opportunity for free individual enterprise and encouraged the exploitation of natural resources. The boundless faith in human reason which had come with the Renaissance,⁶⁸ and the breakdown of spiritually directed authori-

68. The Renaissance priest of the Roman Catholic Church was different from both his medieval predecessor and his modern successor. He believed less and enjoyed more; he could make love and war. Peasants, however, were the same as peasants had always been and were until machinery made an industry of agriculture; businessmen were like their past and present peers. The Italian workers were like the workers of Rome under the Caesars or Mussolini: the occupations made the men. Nevertheless, a combination of intellectual enfranchisement and moral release produced the "man of the Renaissance," whose unique quality was audacity: intellectual and moral; sharp minds, alert, versatile, open to every impression and idea, sensitive to beauty, eager for fame, recklessly individualistic spirits set on developing all their potential capacities, scorning Christian humility, despising weakness and timidity, defying conventions, tabus, Popes. In the city such men might lead turbulent factions; in the state, armies; in the Church they would acquire benefices and use their wealth to climb to power. In art they were no longer artisans anonymously collaborating with others in some collective enterprise as in the Middle Ages; they were "single and separate persons," who stamped their individual character upon their works, signed their name to paintings and carved it on statues. Whatever his achievements, the "Renaissance man" was always moving and discontented, fretting at limits, longing to be a "universal man"—bold in conception, decisive in deed, eloquent in speech, skilled in art, acquainted with literature and philosophy, at home with women in the palace and with soldiers in the camp. The Renaissance men were realists and seldom talked of nonsense. They had good manners when they were not killing, and even then they preferred to kill with grace. They had energy, force of character, direction and unity of will, accepting the old Roman conception of virtue as manliness, but adding to it skill and intelligence. They were not needlessly cruel, and excelled the Romans in their capacity for pity. They were vain, but that was part of their sense of beauty and form. They appreciated the beautiful in women, nature, and art. Those were the common characteristics of the Renaissance man. Individual Renaissance men were as different as the idealistic Pico, with his belief in the moral perfectibility of mankind—or the grim Savonarola, blind to beauty and absorbed in righteousness—or the gentle, gracious Raphael, scattering beauty about him with an open hand—or the demonic Michelangelo, haunted with the Last Judgment long before he painted it—or the melodious Politian, who thought there would be pity even in hell—or the honest Vittorino da Feltre, so successfully binding Zeno to Christ—or the second Giuliano de' Medici, so kindly and just that his brother the Pope considered him unfit for government.

Throughout Italy during the fifteenth century there was a remarkable indifference to the matter of legitimate birth, as a rule became recognized which took no account of pure or impure birth. The fitness of the individual, his worth and

ty during the Reformation, eroded the universal, stable law taught at the medieval universities. Morality was set free from authority. Philosophy was emancipated from Aristotle. Jurisprudence was divorced from theology and law was cut loose from the *Corpus Juris*. Nevertheless, philosophers still felt the need for an unchallengeable starting point and believed they had found it in human reason. Reason demonstrating the natural law and the natural law as the expression of the quintessence of human reason replaced authority.⁶⁹

capacity, were of more weight than all the laws and usages which prevailed elsewhere in the West. It was the age in which the illegitimate sons of allegedly celibate Popes were founding dynasties. The most admired form of illegitimacy was represented by the Condottiere, who, whatever may have been their origin, raised themselves to the position of independent rulers.

The emergence of women was one of the great achievements of the Renaissance. The Renaissance woman of the upper class raised her sex out of medieval bondage and monastic contempt to be the equal of man. She conversed on equal terms with him about literature and philosophy; she governed states with wisdom, like Isabella, or with force, like Caterina Sforza. Sometimes, clad in armor, she followed her mate to the battlefield. She refused to leave the room when coarse or ribald stories were told and could handle the language of the barracks without losing her modesty or her charm. The Italian Renaissance is rich in women who made a high place for themselves by their intelligence and virtue. The education given to women in the upper classes was essentially the same as that given men. Till the time of the Reformation, the personality of women outside of Italy, even of the highest rank, comes forward but little. Exceptions like Isabella of Bavaria, Margaret of Anjou, and Isabella of Castille, are the forced result of very unusual circumstances. In Italy, throughout the entire fifteenth century, the wives of the rulers, and still more those of the Condottieri, have nearly all a distinct, recognizable personality and their share of notoriety and glory. To these came gradually to be added a crowd of famous women of the most varied kind; among them those whose distinction consisted in the fact that their beauty, disposition, education, virtue and piety combined to render them harmonious human beings. There was no question of "women's rights" or female emancipation simply because it was taken as a matter of course. The educated woman, no less than the man, strove naturally after a characteristic and complete individuality. The same intellectual and emotional development which perfected the man, was demanded for the perfection of the woman. The educated women of the Renaissance emancipated themselves by their intelligence, character, and tact, and their success in raising the consciousness of men to a heightened sensitivity toward their tangible and intangible charms. The women of the Renaissance influenced their time in every field: in politics by their ability to govern states for their absent husbands; in morals by their combination of freedom, good manners and piety; in art by developing a matronly beauty which modeled a hundred Madonnas; in literature by opening their homes and their smiles to poets and scholars. During the Italian Renaissance, women moved into every sphere of life; men ceased to be so coarse and crude and were molded to finer manners and speech. The civilization of the Renaissance, with all its laxity and violence took on a grace and refinement such as had not been known in Europe for a thousand years.

Caterina Sforza, wife and eventually widow of Girolamo Friario, whose hereditary possession, Forli, she gallantly defended first against his murderers, and then against Cesare Borgia is typical. Though finally vanquished, she retained the admiration of her countrymen and the title "prima donna d'Italia." This heroic strain of character can be detected in many of the women of the Renaissance. See, generally, J. BURCKHARDT, *THE CIVILIZATION OF THE RENAISSANCE IN ITALY* (2d ed. 1954); W. DURANT, *THE RENAISSANCE, V THE STORY OF CIVILIZATION*, (1953); *THE RENAISSANCE PHILOSOPHY OF MAN* (1948); R. ROEDER, *THE MAN OF THE RENAISSANCE*, (1933).

69. "Man, as the minister and interpreter of nature, does and understands as much as his observations on the order of nature . . . permit him; and neither knows nor is capable of more." See, FRANCIS BACON, *NOVUM ORGANUM* (London, 1620). This "declaration of war on mysticism, obscurantism, and pedantry" was the "bell that called the wits together," and sounded the tocsin of the Renaissance. For fifteen centuries truth was defined not by sensation or reason, but by searching the Scriptures and convening the cardinals. Eventually, however, the Church tolerated the Scholastic game of proving revelation with reason and some of the most

Security of acquisitions and security of transactions have been the domain in which the Law has been usually involved. It is no wonder therefore that property and contract are the two concepts about which the philosophy of law has had the most to say. The philosophical theories of property, however, have generally been explanatory rather than critical or creative. Most of the philosophical theories about property have not shown how to build new and socially useful institutions, but have sought to satisfy mankind with what had been built already. As a result of the highly institutionalized position which property has attained in American life, the "Law of Property" has become a static system more concerned with form than substance.

The many varied and disparate theories about property which appear throughout the history of the law well illustrate how legal principles grow out of the circumstances of particular times at specific places as an explanation of those circumstances at those times and in those places, but then are given universal application as if they were necessarily explanatory or determinative of social and legal phenomena for all times and in all places.

"OWNERSHIP": A MIXED BLESSING TODAY

The system of property ownership in the United States is peculiarly ambivalent. Much is said about the "absolute" nature of private property rights, yet the right to own property is not really absolute as against public authority, which can restrict the use of property in order to protect the public health, safety and welfare, and which can even take it upon payment of some indemnity euphemistically denominated "just compensation."

The fact that legislation limits the use of property, and thereby may reduce its value, does not necessarily make such legislation

brilliant minds were seduced by rationality. Descartes fell in love with reason, Spinoza starved for it, Bruno burned at the stake for it; and men honored the new mistress all the more for being sadistically cruel to her lovers. The worship of reason became itself a religion and a faith: the Enlightenment based its noble belief in "the indefinite perfectibility of mankind" [upon it]; and the Revolution raised altars to a beautiful Goddess of Reason. There was no boon which the intellect would not bring to men.

W. DURANT, *THE MANSIONS OF PHILOSOPHY* 43 (1929).

The time has come to revive the Renaissance Man, that noble intellect who believed that all knowledge was attainable. The time has come to instill in young people the desire to seek the unifying principles of science, and reverse that trend in higher education which encourages the learning of more and more about less and less. Students must emerge from their educational experience with a synthesis of the specialized knowledge of their teachers so that they can never again be constrained by the traditional limitations of departmentalized academic inquiry. While specialized knowledge is certainly valuable, it must be related to the general concerns of mankind and the world as the habitat of the human species. The next generation must be generalists synthesizing the specialized knowledge of the last hundred and fifty years of scientific inquiry and establishing a new Humanism.

V.J. Yannacone jr., *How Much Geology is Relevant to an 18-year-old Voter?* (October, 1971), reprinted in 22 *JOURNAL OF GEOLOGICAL EDUCATION* 162-66 (1974).

unconstitutional as a taking without due process of law and without payment of just compensation,⁷⁰ unless it can be shown that the taking itself is not a reasonable expression of public need. Diminution in value is a relative factor and though the magnitude of any reduction in market value of the property is some indication of a taking, whether in the public interest or not, of itself it does not establish an unconstitutional confiscation, since property cannot be confiscated unless it is "owned." "Who owns America?" is a question that has a number of answers, each of which ultimately depends upon determining the origin of title to property in this country.

No individual or corporation can be considered the absolute owner of property that has become vested with a substantial public interest, since, if we trace any claim of title back far enough, we find that title was originally in the sovereign, which in the United States, is the People, collectively. Although most of the public land has come into the "ownership" of private individuals and corporations, such property is still subject to reclamation by the people as the need arises.⁷¹

The origin of title to real property in some parts of America is well illustrated in rather famous, but probably apocryphal, tale of

70. See *Turnpike Realty Company, Inc. v. Town of Dedham*, 284 N.E.2d 891 (Mass. Supp. 1972), in which flood plain zoning was upheld in Massachusetts. The court considered a possible eighty-eight percent reduction in property value not an unconstitutional taking of private property without just compensation.

See also, *Steel Hill Development v. Sanbornton*, 469 F.2d 956, (1st Cir. 1972) where the First Circuit Court of Appeals held that upzoning a 3/4 acre residential area to six acre minimum lot size in order to stop second home development in New Hampshire did not discriminate against the only developer in the town.

71. Consider the California Redwoods, for example. There is considerable national sentiment favoring some protection of these magnificent trees for the enjoyment of future generations. Unfortunately much of the Redwood forests are now owned by commercial forest product corporations which consider themselves a source of income and whose corporate policy is to harvest the Redwoods as quickly as consistent with maintaining market value and reforest the area with faster growing (though shorter-lived) more commercially valuable species. The timber companies apparently have no objection to returning the Redwood forests to public ownership, provided they are compensated by the public at the fair market value of the trees as commercial lumber in the inflated commercial timber market of today. This has made public acquisition of the Redwoods by the Congress, the State of California or non-profit public benefit organizations so expensive that the areas which can be acquired and protected are not sufficiently large to protect the Redwood forest ecosystem.

There is no doubt that under our existing concept of justice, the owner of land taken for a public use is entitled to just compensation. The issue is, what is "just compensation?" Is it the fair market value of the forest as commercial timber, or only an amount equal to the original cost of the land to the present owner, plus the taxes the present owner has paid on the land since it was acquired together with a reasonable return on that capital investment at a rate no greater than commercial bank interest, and whatever costs are incurred in removing the present operations?

If the timber companies are considered the absolute owner of property that has become vested with the public interest, then they might argue that they are entitled to compensation in an amount that reflects the most profitable use of the property to them as its nominal owners—in the case of the Redwood forests, lumber. Title to the redwoods, however, was originally in the sovereign people of the United States and although the sovereign people under the constitution are required to pay "just compensation" in recovering their property, just compensation does not include an unconscionable profit at the expense of the people. The sovereign people have an obligation to make the nominal title holder whole. The sovereign people have no obligation to provide the property owner with a windfall profit.

the Louisiana title searcher who, shortly after the Civil War, was asked by a large New York City law firm to abstract the title to a parcel of real property in New Orleans. The Louisiana lawyer traced the title back to 1803, and certified title in the present owner. The Wall Street lawyers, however, were not satisfied with the short time covered by the attorney's abstract, and haughtily demanded further search of the title prior to 1803 with re-certification of title in the present owner. To this demand the Louisiana lawyer replied,

On December 20, 1803, the United States purchased Louisiana from Napoleon Bonaparte who had acquired it on November 30, 1803 from the Count of Casa Calvo, Spanish governor of the Louisiana Territory and the duly authorized agent of the King of Spain who claimed title to the territory by discovery, exploration and conquest in the exercise of his Divine Right as King and successor in interest to the Holy Roman Emperor whose title to all the world came from the Pope acting as the earthly vicar of Jesus Christ, the Son of God; and God, as you all know, made Louisiana.

In the United States, all power over land and natural resources once held by the Kings of England, France and Spain, has been acquired by the people of the United States collectively, and is exercised, on behalf of those sovereign people, by the executive, legislative and administrative branches of the government. In the United States, the government acts as the trustee of the power of the people for the benefit of the people.

Before constitutional protection against the seizure of "private" property, the sovereign could simply take property at will. The "taking" clause of the fifth amendment merely assured that the sovereign people would demonstrate a public need and pay just compensation for any such reclamation or taking. The mere fact that the sovereign people of the United States may not be able to move as fast, at times, as the bulldozers of a developer does not prevent a court of equity from acting on behalf of the people to protect a national, natural resource treasure threatened with imminent danger of serious, permanent and irreparable damage.⁷²

72. In the short history of environmental litigation preservation of the Florissant fossil beds still represents one of the most dramatic instances of limiting the use of private property by imposing a public trust on the landowner.

The Florissant fossil beds are located a short distance west of Colorado Springs, Colorado, and contain seeds, leaves, plants and insects from the Oligocene period (approximately 34 million years ago), which are remarkably preserved in paper-thin layers of volcanic shale throughout more than 6,000 acres of an ancient lake bed. Unfortunately, these fossil shales begin to disintegrate when the thin layer of soil protecting them from the weather is disturbed. For many years, scientists, conservationists, naturalists, the National Park Service and individual Congressmen worked to protect the fossil beds by establishing a Florissant Fossil Beds National Monument.

When the Bill passed the Senate in 1969, a Colorado Springs real estate group contracted to purchase approximately 1,800 acres of the monument, and while the House of Representatives was deliberating its version of the bill, the land company announced that it would bulldoze a road through the fossil beds

to open the area for second home development. A group of Colorado conservationists attempted to persuade the land company to wait until the House of Representatives acted on the bill, or at least confine excavation and development to the area outside the fossil beds. The land company refused, but did offer to sell the land containing the fossil beds to the conservationists—for cash at considerably more than what it had contracted to purchase the land for.

Faced with the irreparable loss of a substantial portion of these unique and irreplaceable fossil beds, a small group of concerned citizens formed a non-profit public benefit corporation called the Defenders of Florissant and commenced an action for declaratory judgment and injunctive relief against the land company and all other land owners and contract vendees in the area that was to be included within the National Monument.

The United States District Court heard the application for a temporary restraining order on July 9, 1969, and although the Defenders of Florissant established, without challenge or contradiction, that the excavation for the roads and culverts threatened by the land company would result in the loss of some of the most paleontologically valuable areas within the proposed national monument, the District Court held that there was nothing to prevent the land company from using its property in any way not expressly prohibited by law. While denying the application for a temporary restraining order and a subsequent application for a stay pending appeal, the District Court did note in passing, that the fossil beds ought to be preserved.

Following this decision, the land company agreed to postpone excavation for a few days if there was some assurance that the purchase price could be raised during that time. The Defenders of Florissant soon gave up their futile attempts to raise the ransom and appealed to the Tenth Circuit Court of Appeals the following morning. At the hearing before the court in the afternoon, the three judges questioned whether they had the authority to issue even a temporary restraining order in the absence of any statute protecting the fossils.

Admitting that Congress in its infinite wisdom, had not seen fit to protect fossil beds through either general or special legislation, plaintiffs' counsel argued that "if someone had found the original Constitution of the United States buried on their land and then wanted to mop the floor with it, is there any doubt . . . they could be restrained?" The Defenders of Florissant argued that the right to preservation of the unique irreplaceable fossils, a national, natural resource treasure, was one of the unenumerated rights retained by the people of the United States in the ninth amendment of the Constitution and as such was entitled to protection under the "due process" clause of the Fifth Amendment, and the "rights, privileges, and immunities," "due process" and "equal protection" clauses of the Fourteenth Amendment.

While recognizing the right of landowners to make reasonable use of their land and to profit from their nominal title, the Defenders of Florissant claimed that a court of equity could impose a public trust on that portion of the property which had become vested with the public interest—the 34 million year old fossils. Procedurally, the Defenders established federal equity jurisdiction by invoking the maxim, "Equity suffers no wrong to be without a remedy."

In summation, counsel for the Defenders of Florissant picked up a fossil palm leaf that had been unearthed at Florissant, and holding it up to the court, pleaded:

[T]he Florissant fossils are to geology, paleontology, paleobotany, palynology and evolution what the Rosetta Stone was to Egyptology. To sacrifice this 34 million year old record, a record you might say was written by the mighty hand of God, for 30 year mortgages and the basements of the A-frame ghettos of the seventies would be like wrapping fish with the Dead Sea Scrolls.

After a short recess, the Court of Appeals returned to the bench and announced that it was issuing an order restraining the land company and other land owners in the area from "disturbing the soil, subsoil, or geological formations of the Florissant fossil beds by any physical or mechanical means. . . ."

An evidentiary hearing was held on July 29, 1969 and the District Court denied the Defenders application for a preliminary injunction for the same reasons it had previously denied the application for a temporary restraining order. The Land Company announced it would begin excavation that afternoon although Congress had not yet completed action of the National Monument bill. Several hours later, The Defenders filed a motion for an emergency stay with the Tenth Circuit Court of Appeals, citing the Land Company threat, and the Court of Appeals dramatically issued an order extending its prior temporary restraining order indefinitely.

For a more extensive discussion of the Florissant fossil beds litigation, including the relevant pleadings, affidavits and orders, see YANNAcone, ENVIRONMENTAL RIGHTS & REMEDIES §§ 2:9-2:14.

If the use of property is restricted by public action, whether under the general police power or by some other expression of popular sovereignty; and if that restriction is based upon the need of society expressed through its social institutions, whether the courts, the legislatures or government executives do anything to protect and maintain the property as a public resource,⁷³ title, in the sense of absolute dominion over the ultimate use and disposition of the property is now and always has been in the sovereign people of the United States.

While any limitation on the unfettered exercise of personal rights can be considered a "taking," whether the limitation arises from the exercise of similar rights by some other person or by all the People collectively; nevertheless, limitations on the exercise of personal rights in order to protect the public health, safety and welfare, the classic exercise of the "police power"⁷⁴ of government, can cer-

73. The Roman citizen acquired property by discovery, by capture in war, by labor as a farmer or artisan, through commercial transactions or from inheritance. Private actions at law were available for property so acquired.

Other things which were subject to political, military, or religious use, or like rivers could be put to use by everyone without consumption, were considered not suitable for private ownership and designated *res extra commercium*. As to this class of property, the magisterial rather than the judicial power applied and such property was protected or its use was regulated and secured by interdicts. One could not acquire an interest in such property so as to maintain any private action at law.

Among the *res extra commercium* Roman law distinguished: *res communes*, things owned by no one the use of which was common to all—the air, running water, the sea and the seashores; *res publicae*, the property of the state—highways, rivers, harbors and other property adapted to public use, that is, suitable for use by public functionaries or by the political community for public purposes; *res universitatis*, property of the city such as theaters or other municipal facilities; *res sacrae*, things consecrated; *res religiosas*, tombs and burial grounds; and *res sanctae*, the gates and walls of a city. Because they were devoted to religious purposes or consecrated by religious acts inconsistent with private ownership, *res sacrae*, *res religiosas* and *res sanctae* were *res nullius divini iuris*—no one owned them and no one could acquire ownership of them. *Res nullius humani iuris*, on the other hand, could be acquired by anyone.

74. Beginning in 1827 with the decision of Chief Justice Marshall in *Brown v. Maryland*, 26 U.S. (12 Wheat.) 419 (1827), the American courts have attempted to identify the objects and define the limits of the police power. According to Marshall, when the Union was formed the states had the inherent power, and later—under the Constitution the reserved power, to pass laws to protect the health, safety, order and general welfare of their communities. A power "which unquestionably remains, and ought to remain, with the states," subject only to the limitations of the fourteenth amendment (ratified 1868) of the Federal Constitution which prohibits the states from depriving persons of the life, liberty or property without due process of law. Of course, the final arbiter of what is or is not a deprivation of life, liberty or property without due process of law is the Supreme Court of the United States.

In 1913, as New York City considered zoning, the 1905 spectre of *Lochner v. State of New York*, 198 U.S. 45 (1905), cast a forbidding pall over the novel experiment the City was about to undertake. Believing it had the power—the police power—to do so, New York State passed a law limiting workers to ten hours a day or sixty hours a week. A New York bakery operator immediately challenged the statute on the grounds that his property, the unfettered right to buy as many hours of bakery labor as he chose, had been taken without due process in violation of the fourteenth amendment of the Federal Constitution. This attempt by New York to regulate hours of employment came during the midst of the great reform movement in which Theodore Roosevelt, the muckrakers and eventually President Wilson played so large a role. Many of the demands for progressive state and local legislation rested their claims to legitimacy on the police power and the Supreme Court decision in *Lochner* was to

have important consequences for emergent social legislation and presage the great political confrontation of 1912 over the extent to which government could intervene in social issues.

Splitting 5-4, the court in *Lochner* struck down the New York law as an unreasonable and unconstitutional exercise of the police power. They held that there was no basis for interfering with the liberty of a baker or his employer to contract for hours of labor. After observing that the control of working hours had no possible connection with anything but the worker's health, the majority concluded that while a bakery might not have been the healthiest place to spend ten or more hours a day, it was vastly more healthy than some other places a man might earn his daily bread. (Consider note 32, *supra*).

Oliver Wendell Holmes wrote one of his memorable dissents in *Lochner* and challenged the judicial philosophy of the majority that rationalized the root, hog, or die conduct of the "Robber Baron" era. "The Fourteenth Amendment," Holmes said, "does not enact Mr. Herbert Spencer's *Social Statics*." Ten years prior, Holmes had written to Lady Pollock on the style and measure of Spencer's work: "He is dull. He writes an ugly uncharming style, his ideals are those of a lower middle class British Philistine. And yet, after all abatements I doubt if any writer of English except Darwin has done so much to affect our whole way of thinking about the universe." (See note 34, *supra*).

As Seymour I. Toll notes so perceptively in *ZONED AMERICAN* (1969), Darwinism put a decisive turn upon the direction of much American thinking after the Civil War. One of the grand inconsistencies of the time was that in the midst of rampaging social Darwinism, while the disciples of Herbert Spencer were using the theory of evolution to justify the absence of any public restraints on individual conduct, evolution offered a theory for imposing restraints through public planning, since according to the developing theory, man's environment is decisive in determining his evolution. Out of this logic came a new body of social thought which held that controls fashioned for such goals as slum eradication, free land in the West, and the restraint of wealth would lead to the elimination of crime, the growth of democracy, and the disappearance of corruption. "Modern man did not have to allow the blind chances of nature determine the course of evolution; the use of his intelligence could shape its direction." This became the root assumption of the American urban planning movement as it took form at the turn of the twentieth century. For decades thereafter, zoning was thought to be the prime instrument of that movement and is as inseparable from the modern origins of planning as Darwinism.

The evolution of evolution in the United States is as cross-grained as anything cut from the trunk of a great idea. Out of the same seed grew demands for *laissez-faire* and public control. Although they ran absolutely counter to each other, they arose from the common major premise that evolution is true as a scientific fact. And, with a kind of sporting indifference to Aristotle's prohibition against warring minor premises, they ultimately converged in the identical conclusion that evolution inevitably yields progress.

S. TOLL, *ZONED AMERICAN* (1969).

The orthodox constitutional dogma held that reasonableness was the rule by which police power measures should be tested. If there was a reasonable relationship between the police power regulation and the health, safety, order, or general welfare of the community, then the regulation ought to be upheld. The success of zoning in the City of New York, and the pronouncement of the Supreme Court in *Village of Euclid v. Ambler Realty*, 272 U.S. 365 (1926), has given us zoning as the primary means of land use regulation today. The scheme was proposed by the Fifth Avenue Association of New York for less than noble reasons, however.

The high-class retail business for which Fifth Avenue is so well known is the most sensitive and delicate organism imaginable, depending, first, on the exclusiveness of the neighborhood; second, on its nearness to the homes of the rich and the large hotels; and third, on its lack of congestion, especially on the sidewalks, so that the customers may not be crowded or jammed in a hurlyburly crowd on their way to and from the different shops. . . . The loft buildings have already invaded the side streets with their hordes of factory employees. . . . The employees from these loft buildings cannot be controlled. They spend their time—lunch hours and before business—on the Avenue, congregating in crowds that are doing more than any other thing to destroy the exclusiveness of Fifth Avenue. If the exclusiveness and desirability of Fifth Avenue are destroyed, the value of real estate on Fifth Avenue will depreciate immediately.

The Association's proposal was nothing more than an effort to get the Garment Industry out of the Fifth Avenue "zone,"

because the very essence of the Garment industry—the strange tongues, the outlandish appearance and the very smell of its immigrant laborers,

tainly be justified under the doctrine of popular sovereignty, whether the agent of the people is denominated "Society," the "Nation," or the "Government."

The "taking" clauses of the fifth and fourteenth amendments⁷⁵ have been and continue to be the principal barrier to unfettered regulation of private property by Government agencies and public institutions. After years of litigation and the decisions in hundreds of cases have been considered by eminent scholars,⁷⁶ the extent and strength of the barrier still remains uncertain. As the authors of a 1973 CEQ report lament: "The taking issue is a weak link. All over the country attempts to solve environmental problems through land use regulation are threatened by the fear that they will be challenged in Court as the unconstitutional taking of property without just compensation."⁷⁷

Whether the taking clause of the fifth amendment is a "weak link" depends on one's orientation, interests, and investment portfolio. For many years attorneys have been advising real estate developers and business clients that the "taking clauses," at least as interpreted by the Supreme Court of the United States (ever since that august body first personified the business corporation and then later endowed those corporate "persons" with all the rights, privileges, and immunities of human beings,⁷⁸ lacking only souls to save and backsides

its relentless drive to follow the retail trade wherever it went, its great concentrations of plants and people—violated the ambience in which luxury retailing thrives. It demands insulation from gross forms of work and workers, the symbols of wealth and good living and sidewalks inviting the stroll, the pause, the purchase.

S. TOLL, *ZONED AMERICAN*, (1969).

75. F. BOSSELMAN, D. CALLIES & J. BANTA of the PRESIDENT'S COUNCIL ON ENVIRONMENTAL QUALITY, *THE TAKING ISSUE*, (1973) [hereinafter cited as BOSSELMAN].

76. N. WILLIAMS, JR., *AMERICAN PLANNING LAW: LAND USE AND THE POLICE POWER* (1976).

77. BOSSELMAN, *supra* note 75.

78. Perhaps the root of much of the disfavor which lawyers find in the eyes of the public is the continued adherence to a standard of non-involvement and non-accountability for the social effects of their counsel and advocacy which evolved during post-Elizabethan England.

[A] lawyer has no business with the justice or injustice of the cause which he undertakes, unless his client asks his opinion, and then he is bound to give it honestly. The justice or injustice of the cause is to be decided by the judge.

BOSWELL, *JOURNAL OF A TOUR TO THE HEBRIDES* (1786). It is time for the Bar to heed certain 2,000 year old admonitions: "Woe unto you also, ye lawyers! For ye laden men with burdens grievous to be borne, and ye yourselves touch not the burdens with one of your fingers." *Luke 11:46* (King James). "Woe to you! For you build the tombs of the prophets whom your fathers killed." *Luke 11:47* (Revised Standard).

Much of the arrogance which is associated with delivery of the legal advice which has convinced many property owners and misled any number of law professors to the position that private property rights in the United States are absolute can be traced to the rule (most often applied in nuisance cases) which denied a private citizen the right to seek redress of a common or public wrong without some showing of special damage beyond that suffered by society generally. The rule was so onerous it led sympathetic courts to create and perpetrate all manner of legal fictions in order to circumvent the rule's manifestly harsh and unjust effects. A rule rooted in the unyielding procedural formalism of the English law which led the diverse wits of Swift, Shakespeare, Dickens and Gilbert to taunt the law and mock the lawyer.

[T]here is a society of men among us, bred up from their youth in the art of proving by words multiplied for the purpose, that white is black, and black is white, according as they are paid.

In pleading they studiously avoid entering into the merits of the cause, but are loud, violent, and tedious in dwelling upon all circumstances which are not to the purpose. For instance, . . . they never desire to know what claim or title my adversary hath to my cow: but whether the said cow were red or black, her horns long or short, whether the field I graze her in be round or square, whether she was milked at home or abroad, what diseases she is subject to, and the like; after which they consult precedents, adjourn the cause from time to time, and in ten, twenty, or thirty years, come to an issue.

It is likewise to be observed that this society hath a peculiar cant or jargon of their own, that no other mortal can understand, and wherein all their laws are written, which they take special care to multiply; whereby they have wholly confounded the very essence of truth and falsehood, of right and wrong; so that it will take thirty years to decide whether the field left me by my ancestors for six generations belongs to me or to a stranger 300 miles off.

In the trial of persons accused of crimes against the state the method is much more short and commendable: the judge first sends to sound the disposition of those in power, after which he can easily hang or save the criminal, strictly preserving all due forms of law.

Here my master interposing said, it was a pity that creatures endowed with such prodigious abilities of mind as these lawyers, by the description I gave of them, must certainly be, were not rather encouraged to be instructors of others in wisdom and knowledge. In answer to which I assured his Honour that in all points out of their own trade, they were the most ignorant and stupid generation among us, the most despicable in common conversation, avowed enemies to all knowledge and learning, and equally disposed to pervert the general reason of mankind in every other subject of discourse, as in that of their own profession.

J. SWIFT, GULLIVERS TRAVELS.

"In law, what plea so tainted and corrupt
But, being season'd with a gracious voice,
Obscures the show of evil?"

W. SHAKESPEARE, MERCHANT OF VENICE, III: II

"The first thing we do, let's kill all the lawyers."

W. SHAKESPEARE, II HENRY VI, IV:II.

"The law is an ass—an idiot."

C. DICKENS, OLIVER TWIST.

"The law is the true embodiment
Of everything that's excellent.
It has no kind of fault or flaw,
And I, my Lords, embody the Law."

W.S. GILBERT, IOLANTHE.

"All thieves who could my fees afford
Relied on my orations,
And many a burglar I've restored
To his friends and his relations."

W.S. GILBERT, TRIAL BY JURY.

"Whether you're an honest man or
whether you're a thief
Depends on whose solicitor has
given me my brief."

W.S. GILBERT, UTOPIA LIMITED.

When I went to the Bar as a very young man
(Said I to myself—said I)
I'll work on a new and original plan, . . .
I'll never assume that a rogue or a thief
Is a gentlemen worthy of implicit belief,
Because his attorney has sent me a brief, . . .
I'll never throw dust in a juryman's eyes, . . .
Or hoodwink a judge who is not otherwise, . . .
Or assume that the witnesses summoned in force
In Exchequer, Queens Bench, Common Pleas, or
Divorce,
Have perjured themselves as a matter of course . . .
Ere I go into court I will read my brief through . . .
And I'll never take work I'm unable to do, . . .
My learned profession I'll never disgrace

to kick) were written for their benefit; and that private property cannot be taken without due process of law, which really means without paying all that can be squeezed out of the public treasury by a court in a condemnation proceeding.

Some still stridently proclaim that government regulation of land use or limitations on resource consumption is taking private property without just compensation; however, those who still hold this anomalous, aberrant and anachronistic position would do well to consider that 1973 CEQ report.⁷⁹

Many people seriously believe that the Constitution gives every man the right to do whatever he wants to do with his land, that foreign concepts like environmental protection and zoning were probably sneaked through by the Warren Court. Many more people recognize the validity of land use regulation in general, but believe that it may never be used to reduce the value of a man's land to the point that he can't make a profit on it.⁸⁰

After reviewing both judicial interpretations and scholarly comments on the taking issue, this CEQ report concludes that the court has never adopted the philosophy of non-governmental interference or sanctioned any absolute right to make the greatest private profit from the ownership or use of land.

The right to make money buying and selling land is a cherished American Folkway, and one that cannot be lightly ignored. But in an increasingly crowded and polluted environment can we afford to continue the myth that tells us that the taking clause protects this right of unrestricted use regardless of its impact on society? Obviously not!⁸¹

By taking a fee with a grin on my face,
When I haven't been there to attend to the case.
(Said I to myself, said I!)

W.S. GILBERT, IOLANTHE.

See also:

"I am asham'd [t]he law is such an ass."

G. CHAPMAN, REVENGE FOR HONOR, III, II.

"He saw a lawyer killing a viper
on a dung hill by his own stable;
And the Devil smiled, for it put him in mind,
of Cain and his brother Abel."

S. COLERIDGE, THE DEVIL'S THOUGHTS, IV.

I know you Lawyers can, with ease
Twist words and meaning as you please;
That language, by your skill pliant,
will bend to favor every client;
That 'tis the fee directs the sense
to make out either side's pretense.
When you peruse the clearest case,
You see it with a double face;
For scepticism's your profession;
You hold there's doubt in all expression.

J. GAY, FABLES: THE DOG AND THE FOX IN THE POETICAL WORKS OF JOHN GAY (G. Fober ed. 1926).

"A fox may steal your hens, sir.
[But]

If lawyer's hand is fee'd, sir,
he steals your whole estate."

J. GAY, THE BEGGAR'S OPERA, I, VII, AIR XI.

79. BOSSELMAN, *supra* note 75.

80. *Id.*

81. *Id.*

The meaning of these comments is unmistakable, and the language of the New York Court of Appeals in *Ramapo*⁸² becomes prophetic.

Every restriction on the use of property entails hardship for some individual owners. Those difficulties are invariably the product of police regulation and the pecuniary profits of the individual must in the long run be subordinated to the needs of the community The fact that [An] . . . ordinance limits the use of, and may depreciate the value of the property will not render it unconstitutional, however, unless it can be shown that the measure is either unreasonable in terms of necessity or the diminution in value is such as to be tantamount to a confiscation. . . .⁸³

Where it is clear that the existing physical and fiscal resources of the community are not adequate to furnish the essential services and facilities which a substantial increase in population requires, there is a rational basis for "phased growth,"⁸⁴ and justification for Impact

82. *Golden v. Planning Board of Ramapo*, 30 N.Y.2d 359, 285 N.E.2d 291, 334 N.Y.S.2d 138 (1972).

83. *Id.*

84. In 1968, the town of Ramapo, New York, amended its zoning ordinance to prohibit residential subdivision development except where a developer had obtained a special permit or variance, issuance of which was contingent upon the availability of five essential societal services:

1. Public sanitary sewers or approved substitutes;
2. Drainage facilities;
3. Improved public parks or recreational facilities including public schools;
4. State, county or town roads;
5. Firehouses.

The undisputed intent of these regulations was to provide for orderly growth through sequential development, the timing of which would be governed by the progressive availability of new public facilities and societal services or by the increase in capacity of those already existing.

The amendments were attacked on a number of grounds, principally:

They operated to destroy the value and marketability of property for residential use and thus constituted a present invasion of the property rights of certain named landholders. . . .

The primary purpose of the amended ordinance is to control or regulate population growth within the Town and as such not within the authorized objectives of the zoning enabling legislation.

While the goals of the zoning ordinance amendments were clear and, according to New York State's highest court, such community purposes were "undisputably laudatory," the court acknowledged that the New York version of the Standard State Zoning Enabling Act of 1926 provided no specific authorization for "sequential development" or "timing" controls such as those proposed by Professor Freilich, who drafted the amendments to the Ramapo ordinance and successfully defended them in the courts. Nevertheless, the court refused to permit this lack of specific statutory authorization to serve as an absolute bar to municipal legislation controlling the sequence and timing of development, recognizing that the town of Ramapo was a municipality experiencing the pressures of increasing population and the ancillary problem of providing municipal facilities and services for that increased population. At the time of the litigation, all parties agreed that existing municipal facilities and services were inadequate to meet the increasing demand so the court made additional inquiry into whether the challenged amendments found support within the parameters of the devices authorized and purposes sanctioned under the enabling legislation. The court was more concerned with the effects of the state statutory scheme as a whole and its role in promoting viable land use policy and planning methods, than with legislation. Affirming the principle that towns, cities, and villages in New York lack the power to enact and enforce zoning or other land use regulations without legislative delegation to do so, the court found on the facts presented by the town that the amendments reflected legitimate public needs and were not veiled efforts at exclusion.

Zoning.⁸⁵ Hence ordinances regulating, and where necessary lim-

It seems obvious that the nature of the evidence offered, and the skill with which it was presented during the trial also contributed to the difference between judicial approval of the Ramapo development timing controls and initial judicial disapproval of the "Petaluma Plan." See, note 86 infra.

Although the court respected the fact that the town of Ramapo had adopted a capital budget which could provide the necessary public facilities and services required to support the population expected by the end of the period of development restrictions, it also pointed out that there was no assurance that these commitments would be met over the years by subsequent municipal legislatures and paid for by succeeding generations of taxpayers.

Much has been made of the "point system" used by the town of Ramapo to identify the suitability of an area for residential development at any particular time. It is apparent from the *Ramapo* decision, particularly when read together with the more recent opinions in *Petaluma* and *Mt. Laurel*, that any reasonable criteria which enable a developer to determine the time when development of a particular parcel will be permitted and the extent of development which will be permitted, together with the opportunity to provide necessary public services and facilities privately in order to mitigate the delay, or in the alternative, seek tax relief through reduction in the assessed valuation of the property equivalent to the reduction in market value attributable to the delay in development, will sustain sequential development and timing controls even when some land cannot be developed for as long as 18 years. Although Ramapo and Petaluma both sought to limit development to the capacity of municipal facilities and services, Petaluma did not permit the developer to provide such facilities as a way to advance the time when development would be allowed, while one of the elements of the Ramapo ordinance, which apparently satisfied the court on the due process issue, was the provision that, "a prospective developer may advance the date of subdivision approval by agreeing to provide those improvements which will bring the proposed tract within the number of development points required by the [ordinance]."

It is interesting to note that the intermediate appellate court in New York supported the developers' claim that the primary purpose of the Ramapo ordinance—to control or regulate population growth within the town—was "not within the authorized objectives of the zoning enabling legislation," but the New York Court of Appeals met that argument by simply stating, "We disagree." Unfortunately, the court never said whether it disagreed with the allegation that the primary purpose of the ordinance was to control population growth or the allegation that such a purpose was not one of the authorized objectives of zoning legislation. *Golden v. Planning Board of Ramapo*, 30 N.Y.2d 359, 285 N.E.2d 291, 334 N.Y.S.2d 138 (1972).

85. American society has grown larger and more complex since district zoning was first proposed as a way to keep the immigrants—especially woman and children from the sweat shops—far enough away from Fifth Avenue so that the rich and nouveau riche who made up the carriage trade of New York society would not have their delicate sensibilities offended. Local land use regulations should take the form of impact zoning programs which are more consistent with our Constitution, common law equitable jurisprudence, and the American free enterprise system than district zoning. (See note 74, *supra*).

Those who drafted the Standard State Zoning Enabling Act believed that density per se was the best measure of the character of a community and rigid segregation of land use and human activities was the only method of protecting the public health, safety and welfare. Perpetuation of that belief has led to overcrowded suburban schools, overloaded sewage treatment plants, overburdened transportation systems and over-taxed home owners!

Although many communities have responded negatively to such problems by trying to prevent future growth entirely, the courts have consistently frowned upon such efforts and it appears that no community will be permitted to shirk its share of societal problems by calling a general halt to local development activities, at least not for longer than it should reasonably take to develop a local impact zoning program.

It is becoming increasingly evident that present district zoning ordinances and their associated subdivision regulations, which cling to the exclusionary axioms underlying the Standard State Zoning Enabling Act of 1926, are likely to be struck down by the courts. Several states now have statutes allowing local zoning classifications to be ignored in favor of regional or statewide concerns, and many suburban communities must now face the very real possibility that within the next few years the courts may leave them without any of their conventional zoning tools with which to control new development.

Of course, this crisis in land use regulation like many of the other "crisis" in recent years represents both a danger and an opportunity. Impact zoning repre-

sents one way to meet the immediate danger of unregulated development inconsistent with the public interest while affording municipalities the opportunity to use the methods of environmental systems science in developing enlightened land use regulatory programs for managing local development so as to minimize adverse impact.

Impact zoning provides municipalities with an affirmative program for managing local growth while still accepting a fair share of regional growth. The basic elements of any community impact zoning program include:

- [D]etermination of the capacity of the ecological, societal and economic systems of the community and its region to accommodate existing and future growth;
- . . . identification and analysis of natural, societal and economic constraints upon development;
- . . . formulation and enumeration of community goals for future growth and development;
- . . . legal analysis of the extent of local land use regulatory authority.

The capacity of regional and municipal systems represent limits to growth and constraints upon development. Community goals determine the substance of impact zoning regulations, while state enabling legislation and legal limitations on local municipal authority dictate its form and procedures.

Impact zoning replaces arbitrary density restrictions with a realistic before-the-fact assessment of the total impact of any proposed project upon a particular community in terms of its effects upon a number of key parameters:

- [T]he growth rate of the community as a function of its present population and the extent of land available for development in the region in which the community is located;
- . . . the societal infrastructure of the community and region including its public facilities and services;
- . . . the economic systems of the community and its region, particularly the cost to the community of increased services which may be required as a result of particular development proposals and the additional tax revenues and other economic benefits which might be derived from such development;
- . . . Natural constraints upon, natural determinants of, and natural incentives for, development.

One of the principal advantages of impact zoning is its inherent flexibility. By contrast with existing zoning ordinances and subdivision regulations promulgated under the Standard State Zoning Enabling Act, impact zoning provides a framework for the orderly growth and evolution of a community by identifying a variety of acceptable land uses suggested by the unique characteristics of each parcel of land.

As a land use management system, impact zoning is based on the concept that the full impact of any proposed development on the natural, social and economic environment of a community can, and must, be evaluated before that development occurs, and encourages consideration of the effects of growth upon a community in the context of particular proposals for development. The results of such impact assessments can furnish the "fair preponderance of substantial, credible, scientific evidence" necessary to support planning, timing and management of development by local government in the courts, and direct the private sector, in its own enlightened self-interest, toward that kind of development which will minimize adverse impacts on the community. The inter-related studies and scientific investigations which are necessary elements of any impact zoning program can provide the conceptual model for comprehensive land use regulation and resource management in any municipality in the United States.

Based on the capacity of existing natural, societal and economic systems, the extent of available resources, and constraints upon development inherent in the assayed limits to local growth, certain inappropriate land uses and development activities can be categorically prohibited in specific, well-defined areas.

In those areas otherwise suitable for development, the absence of adequate community services and societal infrastructure can delay development, or transfer the obligation for providing necessary community services and establishing the required societal infrastructure to the developer.

Analyzing the capacity of natural, social and economic systems should establish the natural, social and economic constraints upon development in a community, and necessarily reveal the intrinsic suitability of particular areas for specific uses, which, if consistent with community goals, represent opportunities for development.

Impact zoning is not just another Standard State Zoning Enabling Act or a model zoning ordinance, but a concept to be implemented by local legislation adapted to the capacity and aspirations of each individual community.

Impact zoning represents a dynamic instrument for land use regulation and

resource management in which the developer is given the opportunity for flexibility and innovation in design, while the community is furnished with sufficient information to rationally evaluate the impact of any proposed development. That impact assessment can become a credible basis for regulating, and, where necessary limiting, development to protect the public health, safety and welfare, and further the public interest.

A development proposal which might result in significant adverse effects may still be permitted; subject, however, to continuing, active municipal regulation and impact assessment including detailed consideration of alternatives.

See, Yannacone, Rahenkamp & Cerchione, *Impact Zoning: Alternative to Exclusion in the Suburbs*, 8 THE URBAN LAWYER 417-48 (1976).

The inflexible and rigid "master plans" spawned by federal largesse during the half century since *Euclid* and the Standard State Zoning Enabling Act must be replaced by conceptual models of community ecosystems which consider human societies as biomes and consider human ecotones as carefully as plant associations and vegetation gradients.

A natural community is an assemblage of populations of plants, animals, bacteria, fungi and other microorganisms that live together in some place at some time and interact with one another and their environment to such an extent that they may be considered together as a system of some definite composition and structure, relating to its external environment, and capable of development and function. A community, therefore, is just a system of organisms, including man, living together and considered as a set (in the mathematical sense of a group or collection of objects, relations or events) by reason of their effects upon one another and their interactions with the environment they share. A community and its associated environment when considered as a functional system of complementary relationships, together with the transfer and circulation of matter and energy throughout the system is called an *ecosystem*.

Ecosystems are real like a pond, or a lake or a stream or a forest or an ocean; but they are also abstractions in the sense of being conceptual schemes developed from a study of real systems which, although characterized by great diversity and unique combinations of abiotic and biotic components, still may be characterized by certain general structural and functional attributes that are common to ecosystems as ecosystems. In particular, the two primary ecological processes of energy flow and material cycling establish the basis for consideration of ecosystem dynamics or ecological energetics.

The processes of energy flow and material cycling are fundamental to the study of environmental systems, whether those systems are "ecosystems" in the classic sense of that word as used by plant and animal ecologists, or the myriad of systems in which men interact with fellow men or their environment, and the systems are characterized by the jargon of economics or the social sciences. These fundamental processes, however, are manifested through the agency of living organisms: plants, animals, including human beings, and microorganisms.

By reason of the unique morphological, physiological and behavioral attributes of each species of living organism, each of those species has unique ecological attributes as well. For just as no organism is sufficient unto itself, neither are ecosystems, or in the larger sense, environmental systems, discrete entities delimited sharply from other ecosystems or environmental systems. The mere existence of contiguity and/or continuity complicates the study of environmental systems. See, EDWARD J. KORMONDY, *CONCEPTS OF ECOLOGY* (1969).

Perhaps the most fundamental dimension of an ecosystem is its productivity, whether that productivity is measured in terms of the creation of organic material per unit of area over time, or in the terms of industrial engineering or management science. All biologic activity including human life depends ultimately on the energetics of gross primary productivity, the energy bound in photosynthesis by green plants. See, M. King Hubbert, *Energy Resources*, THE ENERGY CRISIS: DANGER AND OPPORTUNITY ch. 2 (ed. V.J. Yannacone).

Although the over-all productivity of the world may seem very large, effective limitations on what man harvests as food result from characteristics of environment that affect production, the function of plant ecosystems and the efficiencies and technology of plant harvest as well as economic, social, political and cultural factors.

Three of the major modes of nutrition (the means of utilizing plant productivity) are represented in the three functional units of most natural communities. The producers, or green plants create their own food and metabolize a portion of it for their own needs. The consumers, or animals, feed by ingestion and internal digestion of organic material. The reducers, bacteria, fungi and other microorganisms live by absorption and employ external digestion; decomposing organic matter to its inorganic elements.

The functional unity of natural ecosystems is based largely upon a multi-

iting,⁸⁶ the rate of community growth in terms of the availability of societal services do not violate any constitutional mandate.

licity of transfers, a complex interchange of many inorganic and organic substances which interrelate organisms with one another and their environment. The pattern of movement of matter in a large environmental system is a product of movements in space of many dimensions (air, water, soil, biota, etc.), movements in place (the interchanges among organisms and their environment along food chains and throughout food webs) and movement in time.

The function of environmental systems includes a kind of metabolism—the complex patterns of transfer, transformation, utilization and accumulation of inorganic and organic materials.

Substances are transferred among as well as within, ecosystems. The biosphere—the largest ecosystem—includes all the earth's air, water, soil, and living organisms, and is an arena of movement. The air moves, waters flow, soils shift, and living organisms are free to travel. The circulation of nutrients throughout terrestrial, aquatic and marine ecosystems are interrelated by the transfer of nutrients from the land to the sea as a result of the runoff of precipitation, and from the sea to the land by evaporation and precipitation. Eventually, ocean sediments become land by the geologic processes of elevation and exposure.

All the ecosystems of the biosphere are ultimately coupled by biogeochemical cycles, patterns of transfer and concentrations of matter throughout the biosphere. The chemical characteristics of the atmosphere (air), the hydrosphere (water), and the lithosphere (earth and soils), are strongly influenced by living organisms, especially man, during the course of time. See, ROBERT H. WHITTAKER, *COMMUNITIES AND ECOSYSTEMS* (1970).

Ecologists often group similar terrestrial communities together in broad categories, named, for convenience according to their dominant vegetation type, and called *biomes* (when the concern is with both plant and animal elements of the system) or *formations* when considering plant communities alone. Although these units are often the same, biomes defined with vertebrate animals in mind are, in some cases broader units than formations. Since similar biomes and formations can be found widely distributed over the earth, a still broader grouping of systems whose characteristics tend to be similar has been established, called *biome-type* and *formation-type* to describe major communities of worldwide distribution.

Although in the broadest sense there are only two major classes of ecological systems or natural ecosystems—terrestrial and aquatic—each consists of many subdivisions. Aquatic systems are generally separated on the basis of major chemical differences (salinity) and range from freshwater to marine systems, while terrestrial systems are generally distinguished by the dominant type of vegetation.

The major biomes of the world include tropical rainforests; tropical seasonal forests, including monsoon forests; temperate rainforests; temperate deciduous forests; temperate evergreen forests; subarctic-subalpine needle-leaved forests or taiga; elfin woodlands; thorn woodlands and thorn scrubs; temperate woodlands; temperate shrublands or sclerophyll shrublands; Savannas or tropical grasslands; temperate grasslands; alpine grasslands; tundra; tropical and subtropical deserts; warm-temperate deserts; cool-temperate desert scrub; arctic-alpine deserts; cool-temperate sphagnum bog; tropical and temperate freshwater swamp forests; mangrove swamps; and salt marshes.

Ecology, particularly plant ecology, has been very prone to formalism, and the word *ecotone* was introduced to designate the ambiguous boundary between different communities or ecosystems. In the etymology of this word there is a reference to tension—a suggestion of something dynamic that can breathe life into colored patches on a map. Indeed, the boundaries between communities and ecosystems must be considered areas of tension in an uneasy state of dynamic equilibrium where the elements of diverse systems interact constantly along a chimerical frontier and the subtle stresses necessary to encourage evolution are at work.

Exchange at, along, and across, these system boundaries is an important concept of systems science that is of great significance to environmental land use planning and impact zoning. Not all ecotones are the same. Some exist between systems of diverse elements but at the same relative level of maturity as systems, while others separate systems and subsystems of different maturity. Nevertheless, the forces at work along a system interface or ecotone are largely determined by the general properties of the interacting systems. Greater mobility, especially random motion or diffusion is associated with the more rapid evolutionary processes of less mature systems, and there is more rigidity of structure and determinism in position and organization in the more mature systems. See, RAMON MARGALEF, *PERSPECTIVES IN ECOLOGICAL THEORY* (1968).

86. "Can Ramapo pass a law to bind the whole world?" One legal commen-

tator raised this interesting question and seems to believe that the court erred in upholding the Ramapo ordinance. Prudence, however, would suggest that the proper interpretation of the *Ramapo* decision, at least by real estate developers and municipal officials today, should be that municipalities can control or regulate their population growth to a rate consistent with available resources and the carrying capacity of natural, social and economic systems. There seems to be little doubt now that the public interest in air, water and other vital natural resources and environmental systems can be protected by limiting certain kinds of development and such limitations on land use, although perhaps technically a "taking," can be sustained under the general police powers of local government, outside the ambit of the Standard State Zoning Enabling Act:

The power to restrict and regulate conferred [by the zoning enabling act] includes within its grant, by way of necessary implication the authority to direct the growth of population for the purposes indicated, within the confines of the Township. It is the matrix of land use restrictions, common to each of the enumerated powers and sanctioned goals, a necessary concomitant to the municipality's recognized authorized authority to determine the lines along which a local development shall proceed, though it may divert it from its natural course.

It seems to have taken municipalities a long time to accept the fact that the public health, safety and welfare of the community can be protected in ways other than by establishing essentially arbitrary zones and limiting the scope of human activities within those zones. "Zoning historically has assumed the development of individual plots and has proven characteristically ineffective in treating with the problems attending subdivision and development of larger parcels, involving as it invariably does, the provision of adequate public services and facilities. . . ." Although the federal court in *Petaluma* did not mention the *Ramapo* decision directly in its opinion, the issues in *Petaluma* had already been considered by the New York court:

The nature of our inquiry . . . is essentially whether development may be conditioned pending the provision by a municipality of specified services and facilities. Whether it is the municipality or the developer who is to provide the improvements, the objective is the same—to provide adequate facilities, off-site and on-site, and in either case subdivision rights are conditioned, not denied.

Undoubtedly, current zoning enabling legislation is burdened by the largely antiquated notion which deigns that the regulation of land use and development is uniquely a function of local government; that the public interest of the state is exhausted once its political subdivisions have been delegated the authority to zone.

Recognition of communal and regional interdependence, in turn resulted in proposals for schemes of regional and State-wide planning, in the hope that decisions would then correspond roughly to their level of impact

Yet, salutary as such proposals may be, the power to zone under current law is vested in local municipalities . . . [and] though the issues are framed in terms of the developer's due process rights, those rights cannot, realistically speaking, be viewed separately and apart from the rights of others . . . in search of a more comfortable place to live

In their opinion, the court considered the meaning of the mobile society:

There is, then, something inherently suspect in a scheme which, apart from its professed purposes, effects a restriction upon the free mobility of a people until sometime in the future when projected facilities are available to meet increased demands. Although zoning must include schemes designed to allow municipalities to more effectively contend with the increased demands of evolving and growing communities, under its guise, townships have been wont to try their hand at an array of exclusionary devices in the hope of avoiding the very burden which growth must inevitably bring Though the conflict engendered by such tactics is certainly real and its implications vast, accumulated evidence, scientific and social, points circumspcctly at the hazards of undirected growth and the naive, somewhat nostalgic, imperative that egalitarianism is a function of growth

Of course, these problems cannot be solved by Ramapo or any single municipality, but depend upon the accommodation of widely disparate interests for their ultimate resolution Nevertheless, that should not be the only context in which growth devices such as these, aimed at population assimilation, not exclusion, will be sustained. . . .

Hence, unless we are to ignore the plain meaning of the statutory delgation [in the state enabling act], this much is clear: phased growth is well within the ambit of existing enabling legislation The answer which Ramapo has posed can by no means be termed definitive; it is, however, a first practical step toward controlled growth achieved without forsaking broader social purposes.

Any system of land use regulation creates "winners and losers."⁸⁷ The winners get windfalls, the losers get wipeouts.⁸⁸ Both windfalls and wipeouts reflect injustice and any land use regulation system which produces both cries out for remedial action whether by judicial declaration or legislative reform.

Two obvious courses are available to prevent the injustices inherent in public regulation of land use. One is consistent with the determinist economic concept of the completely free market subject only to the limitations imposed by judicial recognition of the equitable maxim, *sic utere tuo ut alienam non laedas*⁸⁹ in private nuisance actions; while the other is for the same government that establishes the system of regulation which leads to windfalls and wipeouts to devise the legal and political means to balance the effects upon individuals and society of both the windfalls and the wipeouts.

In the free market system the government makes two crucial decisions—determination of the overall intensity of development to be permitted and the relative weight of different types of development—but once those decisions are made government disappears as an active participant in the use and development of real property. This minimal government scenario is not, however, the version of land use regulation attracting the most public interest of late.⁹⁰ Unfortunately, most land use control plans today rely on traditional

Golden v. Planning Board of Ramapo, 30 N.Y.2d 359, 285 N.E.2d 291, 334 N.Y.S.2d 138 (1972).

87. Conventional rectilinear district zoning—America's legacy of exclusion and elitism from New York City's Fifth Avenue Association as the "twenties" roared toward the Great Depression—is essentially a system for dividing a community into zones for the purpose of separating allegedly incompatible land uses and segregating human activities such as work, recreation and residence. Current practice generally restricts density in terms of dwelling units per acre and seeks to group certain uses which are deemed compatible or segregate uses which are deemed incompatible by establishing specific districts with arbitrary, fixed boundaries. (See n. 74, *supra*).

Unfortunately, any such districting must accommodate prior non-conforming uses and provide for special exceptions and variances. It is the need to ameliorate the Draconian effect of inherently arbitrary district zoning standards which were often the result of capricious municipal action that has led to so much litigation and municipal scandal since World War II, especially in areas where a change in zoning classification or permitted use may mean a substantial increase in property value to a landowner or a windfall profit to a speculator.

88. Hagman, *Windfalls or Wipeouts?* THE GOOD EARTH OF AMERICA 109 (Harris ed. 1974).

89. According to the legal theory which began to develop in early nineteenth century America, building upon the foundation of the English law of the previous century, the police power of the state was its means and system of internal regulation. The system preserved public order, and in addition, established among its citizens a body of rules whose central purpose was the enforcement of the ancient equitable maxim, "Use your own property in such a manner as not to injure the property of another." This concept came to embrace not only property but also the life, health, comfort and peace of the community. Eventually the concept became the basis for the vague and sweeping legal phrase, "the health, safety, morals, and welfare of the community," as American state and local governments claimed their authority to enact laws to protect these broad objectives as part of their "police power."

90. In addition to seeking to establish a National Land Use Policy Act similar in scope and concept to the National Environmental Policy Act there has been a great deal of scholarly attention given to transfer of development rights, or TDR, as a means of reconciling the constitutional limitations contained in the "taking" clauses and judicial interpretations of "due process" and "equal protection" with the need to limit development of certain real property.

Landowners would be assigned "development rights" associated with their

Euclidian zoning⁹¹ and only represent feeble attempts to redress the

title to real property, which would be valued and regularly assessed by the community in a manner consistent with present methods for assessing the value of real property interests for purposes of taxation. Any restriction on land use imposed by public authority would act to diminish the extent of the development rights associated with the particular property, and would result in lower valuation and a reduction in assessment.

Development rights could be transferrable independently of the property with which they were associated, and when those development rights were transferred, either privately or by operation of law in the public interest to other property, the owner of the development rights would share in the economic gain resulting from the development which had been made possible through the transfer of development rights.

The idea that intangible development rights may be transferred from one parcel of land in an area where in the public interest development cannot or should not be accommodated to another parcel of land in an area where development would be more suitable is neither new nor novel. Both tangible and intangible interests in land have been recognized since remote antiquity. The principal virtue of TDR today is the flexibility it gives to a municipality when the time comes to pay "just compensation" for an actual taking of property in the public interest.

91. Since *Euclid*, conventional zoning laws have been upheld by the courts on the grounds that they represent an attempt by a community to determine the highest and best use of its limited resources for the greatest good of the greatest number of people without undue infringement of individual rights.

The human community and its social and economic systems constitute integral elements of any region just as surely as do the aquifers, aquifer recharge areas, precipitation, climate, topography, watersheds and drainage units, groundwater, soils, vegetation, wildlife, scenic vistas, historic sites, and all the other readily determinable elements that environmental scientists and planners are so fond of inventorying.

Today, determination of the highest and best use of the land, landscape and natural resources in any region must be done by teams of individuals skilled in the various disciplines necessary to define the elements of, the processes operating throughout, and the interactions among those elements and processes within, each and all the several natural, social, societal, and economic systems of a region.

Determination of the highest and best use of the limited land and natural resources of a region mandates a systems approach in order to determine the boundary values and elemental optimizations of the complex, nonlinear, dynamic relations that describe the region as it actually exists in real time, rather than as some stylized formalization which is often little more than a figment of the imagination of some self-proclaimed expert.

Any zoning law or land use regulation—local, state or federal—not based upon such an evaluation must fail. It should fail as legislation and it will fail in the courts if properly challenged.

Land use plans which fail to consider the integrity of regional systems and fully determine the relations and interactions among each element of the land, landscape and natural resources are scientifically inadequate and legally defective; while land use plans which do consider the relations and interactions among each element of the land, landscape, and natural resources can become the basis for legal restraints upon land use even when such restraints limit private property rights.

Any comprehensive plan, whether for village, town, city, county, state or region, which fails to provide for a thorough evaluation of the effects of any proposed land use upon each and all of the natural, social, societal, and economic systems of a region is an inadequate plan at best and ultimately destined to become a costly hoax upon the community.

"Planning" is an action word, and "planning" should be a dynamic process. Unfortunately, the word "planning" seems to have different meanings for life scientists, physical scientists, mathematicians, social scientists, lawyers, judges, and legislators. Perhaps if conceptual models became a common work product of "planning" in all disciplines, systems analysis could become a common language for land use regulation.

In environmental land use planning and resource management, considerable emphasis is placed on the need to understand the system of interacting elements or component parts of the social, economic and natural environments.

Systems analysis is a method for studying, or in the first instance determining, relationships among elements of interdependent systems which can be considered as sets (in the mathematical sense of a collection or aggregation of

objects or events) because they behave as a unit, are involved in a single process, or contribute to a single effect.

The principal reason for using systems analysis in ecology, economics and more recently, the social sciences, is the complexity of environmental systems originating from a variety of causes: the large number of variables; the large number of different types of variables; different levels of systems organization (populations, communities, trophic levels, cycles) and the nonhomogenous and nonuniform distribution of system elements throughout time and space.

Although systems analysis has its roots in military and industrial operations research, applied mathematics, probability, statistics, computer science, engineering, econometrics and biometrics, there are common and now somewhat standard approaches for dealing with the great complexities inherent in the considerations of real systems. One is the operating maxim that complex processes can be most easily dissected into a large number of relatively simple unit components, and that complex historical processes in which all variables change with time (evolve) can be dealt with most easily in terms of recurrence functions which express the state of a system at time $t+1$ as a function of the state of the system at time t . Thus the system is considered not in terms of its entire history but rather in terms of the cause-effect relationships that operate through a typical time interval. This idea of the recurrence relationship is common throughout mathematics. Matrices of transition probabilities in Markov processes are merely stochastic versions of a recurrence relation. Difference equations, differential difference equations, dynamic programming, and the "loops" of computer programs are all based on recurrence relations in which the output from each stage in the computation is the input for the following stage. No breakdown in this approach occurs if the state of the system at time t is a function of the state of the system not only at time $t-1$, but also at time $t+1, t+2 \dots t+n$. Only the number of variables in the recurrence relationship and the dimensionality of the problem are increased.

Another of the basic principals of systems analysis is optimization which brings to many practical problems the whole body of pure and applied mathematical theory related to the maximization and minimization of functions: the mathematics of extrema.

Systems analysis combines the basic ideas of recurrence relations and optimization in order to determine the optimal choice from among an array of alternative strategies at each of a sequence of times: the multistage decision process.

Multistage decision processes share two important basic similarities from a computational standpoint—high dimensionality and the need to be solved by some iterative process—requirements common to other types of problems often encountered in pure and applied mathematics and which have led to development of such now commonplace techniques as multiple linear regression analysis, iterative non-linear regression analysis, and gradient methods for finding maxima and minima among others.

Feedback and feedback control are other concepts of systems analysis that are important in the consideration of ecological, economic and social systems, so that a realistic mathematical description of a process includes terms such that deflection toward the equilibrium or steady state follows departure from equilibrium within the recovery limits of the particular system.

Interaction among system elements is easier to describe in terms of changes and the rates of change at some specific instant in time rather than in terms of the history of the process over time, so that models of interactions are typically conceived of in terms of differential rather than algebraic equations.

Inequality constraints are encountered commonly in ecological systems analysis problems, as are thresholds and limits. Similarly, the common technique of computer programming in terms of a cyclically repeated routine or "loop" is suitable for consideration of ecological problems where historical processes unfold through the repetition of variants of the same basic cycle of events and dispersal occurs through a parallel process, but in space as well as time.

Another important concept from systems analysis useful in environmental systems studies is that of information. The amount of information is related to the degree of order or negentropy in a system and this concept plays a role in studies of community organization. Modern digital computers are well suited for dealing with many of the computational problems of information theory.

Systems analysis usually involves construction of models which describe a system as the set of its interrelated and interacting elements so that mathematical techniques may be applied in an attempt to predict the behavior of the system as a whole over some future period of time. Traditionally, researchers used physical models in laboratory experiments to study the behavior of real systems, however, it has become increasingly difficult to construct physical models of complex environmental and social systems so the emphasis today is on the mathematical representation of such systems.

Ecological systems are composed of many components which interact in a variety of ways. Each biological component of the system is affected by the physical abiotic elements of the system, and all the variables change not only with respect to time but from place to place since the environment is heterogeneous. Discrete system elements interact and each component of the system affects all the others in one way or another. The complexity of the system of interlocking cause-effect pathways confronts us with a superficially baffling problem, and systems analysis was developed to handle such situations.

In general, a system is analyzed in terms of its components. The processes of affecting each component are analyzed and described so that changes with respect to time and distance can be described and ultimately predicted. The interrelationships among the components of the system are also analyzed and a model of the system is usually developed and eventually tested by attempting to simulate, generally with the assistance of a computer, the consequences of alterations in the state variables representing components of the system.

In the case of a real ecological system, no attempt at simulation can be truly complete. Indeed, the art of systems ecology is to determine the crucial elements and processes that govern the general behavior of the ecological system as a system. Systems analysis is particularly useful to citizens and legislators who have to make decisions from less than a total data base.

Viewing an ecological system as an interlocking complex of processes characterized by many reciprocal cause-effect pathways, it can be seen that one of the principal attributes of a system is that it can only be understood by considering it as a whole.

After it has been determined which variables need to be considered in order to fully describe a system, a model can be structured. A model is simply some method, usually a mathematical equation or set of equations, which can be used to describe the behavior of a system (a watershed, air mass, etc.). The first models are generally conceptual models which simply seek to fully describe the system and its behavior qualitatively without making any attempt to quantitatively predict such behavior.

Complex mathematical models require the use of an electronic computer for solution of these equations. Model development includes comparison of predictions based upon the model with observed system behavior. A wide variety of models are available to describe the movement of water and substances contained in water, movement of materials in the atmosphere and the accumulation of substances in individual organisms or communities of organisms. If calculated behavior does not correspond closely enough to observed behavior, appropriate changes are incorporated in the model to make it more realistic.

Models can often be used to predict the consequences of certain events or actions well in advance, thus allowing the public to consider risks and evaluate the costs, benefits of community action before embarking on a costly and perhaps disastrous course.

Once a model has been developed which accurately describes the behavior of a complex system, it can be used in simulation studies to demonstrate how the system can be managed in real life for optimal benefit.

The ability to explain and simulate events clearly varies with their complexity. An architectural model, although a replica in miniature of a building, generally reflects only the form and visual elements of the building while ignoring its structure. Nonetheless, it is a model of the building.

The same type of simulation is employed to represent new towns and urban redevelopment projects in the abstract sense since they remained unpopulated. But while the dynamics of natural and social processes may not occur, the "model" often permits some prediction of the eventual dynamics of the real system.

Major regional subdivisions of the United States can be modeled in ways which describe their environmental systems and permit predictions to be made about regional consequences. Whatever the form of such regional models, however, it is inescapable that the descriptions of the natural, social and political phenomena of regions are usually made by specialists trained in the individual scientific disciplines which are now generally included under the designation "environmental science." In the first instance, the descriptions necessarily reflect the jargon and technical vocabulary of these independent academic disciplines, but models can nevertheless be developed for simulation of the operant natural, social and political processes of a region and these distinct perceptions can be arrayed in a layered multilevel model or plan reflecting reality, chronology and causality.

The principal long term natural processes determining the course of future development in all regions will be geological. Bedrock geology provides the basement of a region and becomes the bottom layer in this type of simulation. Generally the geological events leading to the forma-

tion of igneous, metamorphic and sedimentary rock are measured in terms of hundreds and thousands of millenia. Bedrock geology serves as the physical foundation for plotting the evolution of a landscape.

Surficial geology or the manifestation of bedrock geology at the surface of the land provides a second layer. The major events determining surficial geological characteristics are those of the Pleistocene which began one million years ago and ended with the last Ice Age a little over 10,000 years ago.

The geologic processes and systems of a region are the principal determinants of ground water hydrology. Groundwater is likely to be abundant in surficial deposits and sedimentary rocks, but is limited to cracks, fissures, and faults in igneous and metamorphic rocks. The current expression of exposed bedrock and the upper surface of surficial deposits defines the physiography of the region and represents another layer in this model, a layer which includes the most recent geological activity-coastal and fluvial deposits.

Although river courses are dynamic, many large lakes and major rivers may have occupied their corridors for thousands of years. The hydrology of surface waters follows physiography in time and causality. Soils can be considered the final step in the evolutionary progress of geological events, and are largely a consequence and expression of surface water processes and climate.

The natural vegetation of a region depends on the geology, physiography, hydrology, soils, and climate of the region while the indigenous animal populations depend upon the vegetation. Existing current human land use provides the surface characteristics which are most recent in time.

This kind of model can be represented by a series of maps at consonant scales and can be digitized for computer manipulation. The primary value of such a model is that it is integrative, and demonstrates causal relationships among natural processes.

Mountains and hills reflect rock harder than adjacent valleys.

Rock type definition explains physiography.

Surficial deposits conceal bedrock and reveal their own morphology.

Terminal moraines, outwash plains, drift, till, kames, kettles, eskers and other topographical features become comprehensible in terms of the geological processes from which they were formed.

The patterns of rivers and streams vary with the permeability of rocks and soils and reveal this in the extent and structure of the drainage systems.

The abundance of lakes often reveals obstructions to drainage by glaciation.

The forces of weather and gravity work on rock and produce soils. Soil textures and patterns are derived from the parent material and the vegetation that has occupied them. Soils mirror river courses, old and modern. Coarse material remains at high elevations, while fine sediments occupy valleys.

Plants reveal the most discriminating perceptions of environmental factors. Elevation, slope, aspect, soils and climate are synthesized in the pattern and distribution of native vegetation throughout a region.

Animals, being mobile, are less localized than plants, nevertheless, animal habitats conform to vegetative associations.

Finally, at least until the Second World War, man can be seen mining where geology provides, farming in conformity to soil productivity, shellfishing in estuaries, building on sure foundations, locating roads and railroads in river corridors and through mountain passes.

The ecological model just described reveals the underlying basis for such superficial perceptions.

It can be said that even such an ecologically sophisticated model is static and of necessity frozen at some instant of time past. Indeed, this is true, and any such model must become dynamic if it is to describe and predict even the near future. Nevertheless, important elements of such a model can properly remain somewhat static. Few geological events are so dynamic as to be consequential on planning scales measured in decades, with the important exceptions of earthquakes, beach erosion and deposition, fluvial processes and subsidence.

Surface water systems are likely to remain within existing geological corridors, and soils to retain their lower horizons within the time scale of human planning. The native vegetation associations will probably persist or follow well-defined successional patterns if permitted to do so by man. Not all of the elements in this type of ecological model are dynamic to the same degree.

The assemblage of scientists competent to construct each plane in the model ensures that the professional perceptions essential to describe the dynamic processes which resulted in the present reality will not be overlooked. It is common practice to isolate associated layers and model discrete processes.

Bedrock and surficial geology can be considered together with climate as groundwater process.

Soils and climate can be studied to predict runoff, erosion and sedimentation.

Precipitation, runoff, and percolation can be examined as determinants of vegetation distribution and dynamics, while vegetation and land use can be considered as influences on microclimate.

As these and other relationships are integrated, the value of the basic data can be enhanced. There are innumerable sub-models which can be developed as parts of overall regional models.

This layered modeling technique leads to understanding of the causal relationships among the major phenomena and processes constituting the region as a system. It also facilitates identification and description of relationships among the elements of many seemingly unrelated elements and processes.

Until recently, ecological studies have usually been limited to consideration of small sites by small numbers of scientists. The significant insights that have been derived from such studies can now be used to quantify the great masses of data provided by our national remote sensing efforts (the Earth Resources Technology Satellite, ERTS, and similar programs).

When relationships among elements of major environmental systems have been identified and eventually quantified, predictive models can be developed by means of which the consequences of human activities on natural systems and the modification of natural processes by mankind can be enumerated and quantified. See, IAN MCHARG, DESIGN WITH NATURE (1970).

Mathematical models can be developed at various levels of sophistication and complexity permitting application of powerful mathematical techniques such as operations research. While mathematical models must remain generally idealized present representations of reality and at the present state-of-the-art cannot include all the variations of all the elements of even the simplest natural systems, nevertheless, physical and mathematical models have many advantages over verbal descriptions in the study of environmental problems.

Mathematical modeling requires a knowledge of the physical aspects of the system being modeled as well as the mathematical techniques for operating upon the model. In many ways, the characteristic of the model are influenced by the specific objectives of the model builder, and the techniques involved in analysis of the real world system will depend on the model formulated for its study. See Yannacone, *How Shall We Generate Electricity? Criteria for Public Choice*, THE ENERGY CRISIS: DANGER AND OPPORTUNITY ch 4.

There are certain terms commonly used in systems analysis with which planners, attorneys and concerned citizens should be familiar.

The controllable and partially controllable constrained inputs to a system are called *decision variables*.

When each decision variable has been assigned a particular value, the resulting set of decisions is called a *policy*.

A policy which does not violate any of the constraints imposed by the system is called a *feasible policy*.

The set of all possible feasible policies is termed a *policy space* and may vary with time in space of many dimensions. (For example, air, water, soil, vegetation, and animal communities would each be considered "dimensions" in this sense of the word.)

The condition of the system at any time and place is represented by variables known as *state variables*.

Supplementing the state variables are the *system parameters* which may be constant or variable and are determined by considerations outside the system under immediate consideration.

State vectors are quantities which in addition to magnitude are characterized by direction—in time (past or future), in space (any direction in any dimension), or both, and must include all aspects of the system which are or can be affected by changes in the decision variables.

The concept of a "best decisions" set or policy implies the existence of criteria by means of which the effects of any feasible policy on the output of the system can be evaluated. Such criteria are called *overall objectives*, and in most instances consist of many component objectives some of which are quantitative, while others are measurable at best only in an ordinal or qualitative sense.

If two objectives can be measured or described in the same units or terms and to the same general relative degree of accuracy, they are said to be *commensurate*. *Non-commensurate* objectives are those which cannot be expressed in

excesses of that already moribund system. The public interest and the interests of individual private property owners would both be better served by ecologically sophisticated, environmentally responsible, socially relevant, economically viable, and politically feasible legislation regulating land use and resource exploitation, but until

common units or those in which the order of magnitude of the errors inherent in the evaluation of one variable may mask the significance of the magnitude of the other variables.

The *objective function* is a statement by means of which the consequences or output of the system can be determined, given the policy, the initial values of the state variables, and the system parameters. Although conventional usage, particularly in economics has limited the term objective function to quantitative objectives that are commensurate, many environmental systems include non-quantitative and non-commensurate objectives, which may account for the reluctance of many economists to consider environmental factors in cost/benefit and benefit-risk analyses.

Weighting and scaling factors can be used as means of combining multiple objectives of varying dimensions into a single objective function, but such factors are usually determined politically and socially rather than mathematically.

Formulation of an objective function is a major concern of systems analysis, and characterization of the appropriate restrictions or constraints on the operation of a model is one of the most critical steps in the process of formulating an objective function. There are natural and physical constraints, economic constraints, societal constraints, and political constraints limiting the operation of any real environmental system.

Systems analysis always includes formation, development, testing and validation of some model, usually a mathematical model, followed by identifying and optimizing an objective function. Human judgement, however, is required at every stage in the analysis of complex systems in order to avoid building computationally unfeasible models or models which may be mathematically feasible but so oversimplified as to be non-representative of the system modeled. Enthusiasm by a researcher for a particular solution technique occasionally leads to modeling systems in a way that will permit the use of that particular technique, rather than modeling the system as it actually occurs in nature. This is particularly true in consideration of economics where unreasonable commitment to linear regression techniques often leads to misrepresentation of the environmental impact of business and government action on environmental systems.

Systems analysis is still to some extent an art wherein success requires a serendipitous blend of real world data, modeling, mathematical and scientific intuition, choice of the "right" optimization techniques, and often represents, in retrospect, the "propitious confluence of fortuitous circumstances."

There is no single or "best" optimization technique which can be applied to any specific problem in systems analysis. Each of the techniques available has advantages and disadvantages, so that selection of any specific technique involves consideration of many factors including:

- . . . the structure of the objective function and constraints inherent in the formulated model
- . . . the nature of the data available as inputs to the model
- . . . the level of accuracy of the solution sought
- . . . the characteristics of the computers available for solution of the problem
- . . . the computer time available.

Optimization methods are generally considered in two groups characterized by the mathematical techniques associated with their implementation:

Control theory with its classical roots in the calculus of variations, and Operations Research which contributed substantially to the success of the Allies during World War II.

Operations Research deals mainly with mathematical programming: the analysis of the mathematical model in order to achieve a specific solution goal. The word "programming" when used in the context of "mathematical programming" is analogous to "planning," and should not be confused with computer programming, although computers are frequently called upon to perform the iterative mathematical computations required by many mathematical programming techniques.

that time the interests of society will demand judicial protection of social property as the result of appropriate equity litigation.⁹²

92. Wherever citizens are faced with imminent danger of serious, permanent and irreparable damage to the land, landscape and natural resources, a clean hands appeal to equity, properly framed and imaginatively articulated, establishing the existence of an environmental wrong and demanding an equitable remedy can be the most effective weapon in the battle to protect national, natural resource treasures from private greed or public blundering. Class actions seeking declarations of the rights of the People to a salubrious environment . . . clean air, potable water, viable populations of diverse plants and animals and responsible utilization of the limited supply of the world's non-renewable natural resources for the full benefit, use and enjoyment of this generation and those generations yet unborn . . . asserting these rights under the ninth amendment and the Trust Doctrine are the ways the citizen can look to the law for protection of the environment while awaiting ecologically sophisticated, environmentally responsible, socially relevant and politically feasible legislation.

The environmental advocate usually has only one chance to obtain timely, temporary, equitable relief; and must plead all the elements of the cause of action in the initial application to the court, usually on a motion to bring the suit. See, *Sierra Club v. Morton*, 405 U.S. 727 (1972). Though the basis of the Court's decision in that case was the Club's failure to show that it was an aggrieved party, the decision is not to be interpreted as an inflexible judicial denial of standing to all those seeking to represent the public interest as private attorneys general. Rather, it was a failure of the conservation groups led by the Sierra Club to prove that in this instance they represented a party aggrieved by the actions complained of.

The Supreme Court ruled that the Sierra Club had failed to establish sufficient direct interest in the controversy to be accorded standing. The Club had not shown that the organization would suffer "injury in fact" from the action challenged. "[A] mere 'interest in a problem,' no matter how long standing the interest and no matter how qualified the organization is in evaluating the problem, is not sufficient by itself to render the organization 'adversely affected' or 'aggrieved' within the meaning of the APA." The Court indicated that aesthetic and environmental interests if sufficiently established could provide a basis for standing. Further, the Court rejected the claim that standing required special damages. Thus the Court held that once a person is established as a proper representative of a party aggrieved or adversely affected that person, whether an individual or organization, may assert the interests of the general public in environmental litigation, without the necessity of showing special damages.

The *Mineral King* litigation is just one contribution to the miasma of apparently inconsistent decisions arising out of the morass of litigation spawned by those "Piper Cub" lawyers, Burger, 10 TRIAL LAWYERS QUARTERLY 12 (1974), of which Chief Justice Burger is so fond. The "747 litigation," which no doubt the Supreme Court eagerly awaits, would challenge proposed federal agency action on the merits and be supported by a fair preponderance of the substantial, credible, scientific evidence. Petitioners would assert imminent danger of serious, permanent and irreparable damage to natural resources and the environment as a result of the proposed agency action and would seek equitable relief, not merely procedural compliance with NEPA by pro forma filing of an environmental impact statement.

The real tragedy of the *Mineral King* case was the failure of the Sierra Club to establish the basic requisites for equitable relief in environmental litigation—imminent danger of serious, permanent and irreparable damage to a national, natural resource treasure.

Had the Sierra Club:

1. amended its complaint to challenge the proposed recreational development, supporting highway and overhead transmission lines on the grounds that such a development does not represent the highest and best use of a national, natural resource treasure; and
2. alleged that determination of the highest and best use of a national, natural resource treasure requires use of the methods of environmental systems science; and
3. brought the action on behalf of all the people of the United States, not only of this generation but of those generations yet unborn, who are entitled to the full, benefit, use and enjoyment of the national, natural resource treasure without damage resulting from failure of the federal agencies to determine the impact of their proposed public improvements upon such a national, natural resource treasure in accordance with the methods of environmental systems science; and