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Changing Conceptions of Property and Sovereignty in Natural Resources:
Questioning the Public Trust Doctrine

Richard J. Lazarus*

With the public trust doctrine, the California Supreme Court appears enthusiastically to have embraced a new legal Renaissance, in which modern "humanists" rediscover old texts and invoke the distant past to liberate the spirit from the confining "shackles" of a more conventional era. But we are not witnessing Petrarch, mildly unorthodox in reviving Cicero, or Boccaccio retelling irreverent stories borrowed from Ovid. Here, the half-forgotten ancient models are the codes of the Emperor Justinian and Alfonso the Wise of Castille, the Magna Carta wrested from King John and the Treatise of Henry de Bracton. We may question whether such a revolution, not in literature or philosophy, but in the law of property, even on the claim of returning to an earlier wisdom, is equally to be applauded.1

Natural resources law, historically concerned with the maintenance and orderly exploitation of basic natural resources such as water, fossil fuels, oil, natural gas, mineral deposits, and timber, has undergone a significant transformation in recent years. The emergence of "environmental law" has been the primary focus of attention during this period. Certainly, that emergence has been nothing short of spectacular. The last fifteen years have witnessed a fantastic effort to develop a framework of legal rules reflecting this nation's increased awareness of the adverse impacts of environmental pollution and degradation.2 Through a pyramidal imposition of health- and technology-based standards and performance criteria, environmental laws have strived to respond to the reordering of social priorities that has resulted from an enhanced understanding of the need for pollution control. A predecessor to and now contemporary of environmental law, natural resources law is responding as well to increased

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societal environmental awareness and concern. Both apart from and, in
certain respects, as a part of environmental law, legal rules governing
natural resources are increasingly changing to better accommodate the
now-perceived conflicts related to resource utilization. It is time, now,
to reexamine natural resources law in light of these developments.

To that end, this Article considers and evaluates the "public trust
doctrine," one of the most remarkable legal bases upon which natural
resources law has relied in this ongoing transformation. The public trust
doctrine is based on an amorphous notion that has been with us since
the days of Justinian—the notion that the public possesses inviolable rights
in certain natural resources. Commentators first hailed the doctrine in
1970 as offering the most promising legal basis upon which individual
members of the public could maintain a lawsuit to protect natural resources
from needless degradation and destruction. In the seminal article on the
trust doctrine, Professor Joseph Sax reconstructed how the mostly dor­
mant doctrine had historically functioned in the United States to safeguard
public rights in navigable waterways, and he predicted that the doctrine
could expand to embrace broader environmental concerns.

Tantamount to an academic call to legal arms on behalf of the natural
environment, the public trust thesis has borne judicial fruit. In cir­
cumstances radically beyond the trust doctrine's historical confines, courts
over the last fifteen years have repeatedly invoked the doctrine in litiga­
tion brought to halt environmentally destructive activities.

In examining the doctrine, this Article will inquire, first, how the
doctrine has operated in litigation brought to further natural resource pro­
tection goals and, second, in light of changing conceptions of property
and sovereignty in natural resources, whether hindsight teaches that the
strategy of relying on the doctrine to promote those goals was sound and
should be continued. The first inquiry is addressed in section II, which
contains a review of public trust litigation since 1970 that presents an im­
pressive record of achievements for the doctrine in a wide variety of con­
texts. The second, more fundamental inquiry concerning the doctrine’s

journal publication preceded a more broad-based work by Sax that included the public
4. See Sax, supra note 3, at 557.
5. The impact of the public trust doctrine thesis contrasts with that of other less suc­
cessful contemporaneous submissions offering various theories in support of a constitu­
tional right to a healthy environment. See, e.g., Esposito, Air and Water Pollution: What
Kirchick, The Continuing Search for a Constitutionally Protected Environment, 4 Envtl. Aff. 515
6. See infra text accompanying notes 10-55.
7. See infra text accompanying notes 56-163.
viability, discussed in sections III and IV, defies an easy and positive response. Most simply put, the historical function of the public trust doctrine has been to provide a public property basis for resisting the exercise of private property rights in natural resources deemed contrary to the public interest. In recent decades, however, especially during the last ten years, modern trends in natural resources law increasingly have eroded traditional concepts of private property rights in natural resources and substituted new notions of sovereign power over those resources. These trends, reflected in a wide variety of legal contexts ranging from federal environmental protection statutes and new state resource allocation laws to evolving common-law principles of tort law, are currently weaving a new fabric for natural resources law that is more responsive to current social values and the physical characteristics of the resources. By continuing to resist a legal system that is otherwise being abandoned, the public trust doctrine obscures analysis and renders more difficult the important process of reworking natural resources law. Of even broader concern, the doctrine threatens to fuel a developing clash in liberal ideology between furthering individual rights of security and dignity, bound up in notions of private property protection, and supporting environmental protection and resource preservation goals, inevitably dependent on intrusive governmental programs designed to achieve longer-term collectivist goals.

I. THE ORIGINS OF THE PUBLIC TRUST DOCTRINE IN AMERICAN LAW

The origins of the public trust doctrine, much belabored and debated in other works, need not be repeated in detail here. It is sufficient for present purposes to mark out the path from the doctrine's initial development abroad to its current infusion into domestic law.

A. Roman and English Common Law

The notion of a public trust doctrine finds its earliest expression most clearly in the work of Justinian, whose celebrated compendium of principles of Roman law declared natural law communal rights in certain basic and omnipresent natural resources: By natural law, these things are common property of all: air, running water, the sea, and with it the shores.

8. See infra text accompanying notes 164-367.
9. See infra text accompanying notes 368-476.
of the sea.\textsuperscript{11} This declaration, likely reflecting less the true nature of public rights during the Roman Empire than Justinian's own idealization of a legal regime,\textsuperscript{12} was in all events mimicked practically verbatim in the Spanish thirteenth-century code, \textit{Las Siete Partidas},\textsuperscript{13} as well as in the "Recopilacion de leyes de los Reinos de los Indies" promoted throughout the Spanish Empire,\textsuperscript{14} and eventually was reflected in the customs of most European nations in the Middle Ages.\textsuperscript{15}

\textsuperscript{11} See \textit{The Institutes of Justinian} bk. 2, tit. 1, pts. 1-6. at 65 (J. Thomas trans. 1975). The notion that in earlier times people lived in total harmony—sharing abundant natural resources—is evident in the writings of many early writers, including Ovid, Hesiod, Horace, and Vergil. I B. More & W. Brewer, \textit{Ovid's Metamorphoses} 397-99 (rev. ed. 1978). The expression "things common to all" is found in the works of the third-century jurist Marcian as well as in biblical descriptions of life in Eden. \textit{See} Deveney, \textit{supra} note 10, at 26-29.

\textsuperscript{12} Justinian intended \textit{The Institutes} as an elementary textbook for first-year students and the \textit{Digest} as a "patchwork" of juristic commentary, not necessarily internally consistent. \textit{See} A. Watson, \textit{The Making of the Civil Law} 12, 25 (1981); \textit{see also} Deveney, \textit{supra} note 10, at 24-26 (discussing \textit{The Institutes} and the \textit{Digest}). Neither amounted to what today we consider binding precedent. Indeed, in practice, the Roman government reportedly did not shy from conveying private rights in coastal resources to promote commercial exploitation of the sources. \textit{See id.} at 33-34 (almost all coastal resources granted outright or leased to privately held monopolies for development); \textit{see also} Ker v. Couden, 223 U.S. 268, 276 (1912) ("Roman law is not like a deed or a modern code prepared \textit{uno flato}. History plays too large a part to make it safe to generalize from a simple passage in so easy a fashion."). For this reason, several commentators argue that no legal doctrine protecting public rights in natural resources, such as the public trust doctrine, existed during the Roman Empire. \textit{See}, \textit{e.g.}, Deveney, \textit{supra} note 10, at 17, 23-26; MacGrady, \textit{The Navigability Concept in the Civil and Common Law: Historical Development, Current Importance, and Some Doctrines that Don't Hold Water}, 3 Fl. St. U.L. Rev. 511, 559 (1975). \textit{But see} Comment, \textit{supra} note 3, at 789 (arguing that Americans at least should be entitled to those environmental rights guaranteed Roman citizens).

\textsuperscript{13} Las Siete Partidas, pt. 3, tit. 28, laws 3, 4, 6. Las Siete Partidas was greatly influenced by prior compilations of Roman law. \textit{See} B. Dobkins, \textit{The Spanish Element in Texas Water Law} 74-75 (1959). Partida 3 was taken practically verbatim from Roman law. \textit{See id.} at 76; J. Vance, \textit{The Background of Hispanic-American Law—Legal Sources and Juridical Literature of Spain} 98 (1949); \textit{see also} Ker v. Couden, 223 U.S. 268, 275-76 (1912).

\textsuperscript{14} This compilation of preexisting Spanish law was enforceable in all of Spain's overseas territories, including the eighteen Spanish republics in South and Central America, as well as territories now included in the United States (such as parts of Texas, New Mexico, Arizona, California, Nevada, Utah, Oklahoma, Colorado, Kansas, and Wyoming). \textit{See} Jover Y. Costas v. Insular Gov't of Philippines, 221 U.S. 623, 629 (1911) (construing Las Siete Partidas as Philippine law); E. Van Kleffens, \textit{Hispanic Law Until the End of the Middle Ages} 27-28 (1968). Consequently, the precise import of certain provisions of Las Siete Partidas has not infrequently been at issue in American courts. \textit{See}, \textit{e.g.}, Summa Corp. v. California ex rel. State Lands Comm'n, 104 S. Ct. 1751, 1757 (1984).

\textsuperscript{15} Professor Sax more recently has suggested that eleventh-century French law may offer the best historical precedent for the modern trust doctrine. \textit{See} Sax, \textit{supra} note 10, at 189 ("[T]he public highways and byways, running water and springs, meadows, pastures, forests, heaths and rocks ... are not to be held by lords ... nor are they to be maintained ... in any other way than that their people may always be able to use them."").
The public trust found its way into our English common-law heritage through the writings of Bracton in the mid-thirteenth century. Borrowing from the Roman notion of resources “common to all” or “res communes,” Bracton also declared the shores of the sea “common to all” and inalienable. Here too, however, practice appears to have departed from pronouncement. More formal confirmation of the public’s rights to valuable coastal resources occurred only when the Crown, seeking a means to increase the treasury, resurrected those rights to support its claim of prima facie ownership of the shorezone to the high water mark, notwithstanding prior royal grants of littoral lands to private parties. Thus, although in some sense English common law recognized public rights in the shorezone area, they were, at bottom, rights controlled by the sovereign.
B. Introducing the Public Trust Doctrine into the United States

The English common-law notion that the public retains certain inviolable rights to natural resources ultimately found its way into judicial opinions in the United States. Adopting the distinction first expressed in Lord Chief Justice Hale’s treatise, nineteenth-century American jurists divided the interests in navigable waters into three categories: (1) *jus publicum*—the rights of the general public; (2) *jus regium*—the royal right to manage resources for public safety and welfare (akin to our modern police power); and (3) *jus privatum*—the private right of title.21 The dual sovereign nature of our federal system, however, added a new twist to the *jus publicum*. From the outset, the Supreme Court described the sovereign interest of the national government in terms differing from the state government’s sovereign interest, even though it described the interests of both sovereigns in property law terms. The Court termed the federal sovereign’s paramount interest over commerce in interstate navigable waters the “federal navigation servitude.” In contrast, the Court described the state interest generally in terms of the state’s “sovereign ownership” of the bed of certain navigable waters within each state’s own borders. Apart from the precise labels the Court employed, the common interest of both sovereigns in those water resources was clear in the nineteenth century. Commerce was primarily waterborne; the rivers served as highways for pioneers and supplied power for industry. Accordingly, cities and towns invariably lined major waterways, and natural ports were a prerequisite to developing a major metropolitan area.22

1. Federal Navigation Servitude

Federal insistence that navigable waterways were subject to special public rights and, therefore, national sovereign authority, was first formal-
ized when states attempted to grant exclusive franchises to navigate their waterways. Indeed, it was this type of arrangement between New York and Robert Fulton (of steamboat fame) and Ambassador Livingston that led Chief Justice Marshall to declare in *Gibbons v. Ogden* that commerce in navigable waterways was of such great importance that maintenance and availability of the waterways must be within the exclusive control of the federal government. This ruling spawned a host of judicial decisions concerning the scope and significance of this special federal power, called the federal navigation servitude. These decisions occurred as the national government sought to expand the internal waterway system and in so doing often interfered with the specific plans of states and private parties.

2. *State Ownership of Beds of Navigable Waters*

At the state law level, the public trust doctrine took on a different character, suggesting not only that the state possessed special powers over these water resources, but also that it owed certain enforceable duties to the public as well. The Supreme Court ultimately described the nature of this state authority in 1842 in *Martin v. Lessee of Waddell* as state ownership of the beds of navigable waters in their sovereign capacity.

The origins of the modern public trust doctrine thesis lie in the notion of "sovereign capacity" ownership. In particular, lurking in the background of those early judicial rulings was the suggestion that state power to alienate the resource or otherwise deny general public access is sharply restricted. This suggestion was critical to Sax' later thesis and

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25. Fly, supra note 22, at 278-81.


27. See id. at 410. This case concerned a dispute between two private parties over their right to fish for oysters in Raritan Bay. The plaintiff claimed the right through mesnes conveyances from the Crown, and the defendant claimed the right pursuant to a state grant. Id. at 380-81.

28. The New Jersey Supreme Court decision in *Arnold v. Mundy*, 6 N.J.L. 1 (1821), cited by the Court in *Martin v. Lessee of Waddell*, 41 U.S. (16 Pet.) at 417, is the earliest public trust decision to suggest that the public possesses certain water resources access rights that cannot be precluded by legislative alienation. *Arnold* also involved a dispute over the use of an oyster bed in Raritan Bay. The state court based its decision—that such legislative authority "never could be borne by a free people," see 6 N.J.L. at 13—on the "law of nature," the "civil law," and the "common law of England," see id. at 11-12. Although the United States Supreme Court followed *Arnold* in *Martin v. Lessee of Waddell*, and subsequently relied on it in *Illinois Cent. R.R. v. Illinois*, 146 U.S. 387, 455-56 (1892), which is discussed infra at notes 30-44, the New Jersey court chose to abandon *Arnold*'s
found its roots in judicial descriptions of sovereign ownership of waterways as akin to the powers and duties of a trustee.\footnote{29}

3. The Illinois Central Railroad Decision

In \textit{Illinois Central Railroad v. Illinois}\footnote{30} the Supreme Court squarely addressed the issue of the meaning of state sovereign ownership. The legal issue raised in that case was fairly narrow—whether Illinois could, by legislative enactment, repeal an earlier statute conveying huge portions of the bed of Lake Michigan to Illinois Central without offending the federal Constitution.\footnote{31} The Supreme Court’s reasoning in upholding the state legislature’s subsequent action is not evident. The Court could have relied easily on the theory that the initial enactment was devoid of legitimate public purpose, especially given that the Court could have done so merely by deferring to the subsequent legislature’s considered judgment.\footnote{32} The four-justice majority instead expounded at length on the special nature of sovereign ownership of navigable waters to support its ruling that the state grant had been revocable.\footnote{33} The thrust of the Court’s far-reaching rationale and effectively overruled it. \textit{See} Gough v. Bell, 22 N.J.L. 441. 458-60, aff’d, 23 N.J.L. 624 (1852). \textit{See generally} Rosen, \textit{supra} note 16, at 572-74. Moreover, the historical accuracy of research the \textit{Arnold} court relied upon in its decision is in doubt. \textit{See} MacGrady, \textit{supra} note 12, at 590-91.

\footnote{29. Indeed, in dicta, the Supreme Court in \textit{Waddell} described the sovereign’s dominion over submerged lands as “in trust” and as a “public trust.” \textit{See} 41 U.S. (16 Pet.) at 411.}

\footnote{30. 146 U.S. 387 (1892). Two members of the Court did not participate in the case. \textit{See id. at 476 (Fuller, C.J., & Blatchford, J.)}. Three justices dissented. \textit{See id. at 464 (Shiras, Gray & Brown, JJ., dissenting)}.}

\footnote{31. \textit{See id. at 449, 452}.}

\footnote{32. At the time \textit{Illinois Central} was decided, the Court strictly applied a constitutional requirement of “public purpose” to state and local laws, holding invalid laws that benefited particular groups within society. \textit{See} Loan Ass’n v. Topeka, 87 U.S. 655, 664 (1874) (governmental expenditure favoring small class of individuals tantamount to “robbery”). Soon afterward, the Court overruled this line of precedent and adopted a more deferential view of the public purpose requirement. \textit{See} Fallbrook Irrigation Dist. v. Bradley, 164 U.S. 112, 160, 164 (1896); \textit{see also} Milheim v. Moffat Tunnel Dist., 262 U.S. 710, 723 (1923) (upholding assessment on abutting landowners the costs of building tunnel for railroad).}

\footnote{33. The Court took pains to stress the special “trust” nature of the state’s title: \textit{[State title to the lands under navigable waters] is a title different in character from that which the State holds lands intended for sale. ... It is a title held in trust for the people of the State that they may enjoy the navigation of the waters, carry on commerce over them, and have liberty of fishing therein freed from the obstruction or interference of private parties. ... [Grants that] do not substantially impair the public interest in the lands and waters remaining [are valid] ... A grant of all the lands under the navigable waters of a State has never been adjudged to be within the legislative power; and any attempted grant of the kind would be held, if not absolutely void on its face, as subject to revocation. The State can no more abdicate its trust over property in which the whole people are interested, like navigable waters and soils under them ... than it can abdicate its police powers in the administration of government and the preservation of the peace ...}.
opinion, though certainly unnecessary for the result, is unmistakable. According to the Court, at some level a state legislature is powerless to convey into private hands a natural resource as important as Chicago’s harbor. The decision, however, raises more questions than it answers.

First, the Court assumed that without title the state would be powerless to prevent use of the harbor, which the state later determined was contrary to the public interest. But the lack of power hardly seems plausible, given that state police power would regulate railroad uses of the resource and the federal navigation servitude would still provide for both maintenance of the navigability of the resource and public access. In all events, certainly no legal bar would prevent the state from exercising its eminent domain authority to repurchase the property.

The decision raises a second, even more perplexing issue. It is far from clear what source of law the Court was drawing upon to reach its result. Language in the opinion suggests that the Court was announcing a rule based on federal law universally applicable to all state legislatures.

The harbor of Chicago is of immense value to the people of the State of Illinois... [T]he idea that its legislature can deprive the State of control over its bed and waters and place the same in the hands of a private corporation created for a different purpose, one limited to transportation of passengers and freight between distant points and the city, is a proposition that cannot be defended. . . . .

Any grant of the kind is necessarily revocable... The position advanced by the railroad company... would place every harbor in the country at the mercy of a majority of the legislature of the State in which the harbor is situated.

34. The significance the Court places on the doctrine is reminiscent of the common-law notion that certain lands are so intrinsically tied to the “Kingly office” that their dissipation would threaten the very existence of the sovereign. These common-law lands, referred to as the ancient desmesne, contrasted with those more temporary properties gained through conquests. 1 F. Pollock & W. Maitland, supra note 20, at 383-84; see supra note 15.

35. The same judicial assumption that state title was necessary to support state sovereign authority over a natural resource is evident in the Court’s decisions that rejected the “English Rule” and extended state sovereign ownership to the beds of nontidal navigable waters. See Barney v. Keokuk, 94 U.S. 324, 337-38 (1876); Propeller Genesee Chief v. Fitzhugh, 53 U.S. (12 How.) 443, 457-58 (1851); Deveney, supra note 10, at 54; Rosen, supra note 16, at 575. The test of navigability for title purposes is a matter of federal law, see United States v. Oregon, 295 U.S. 9, 9-10 (1935), and looks to whether the waterway’s natural and ordinary condition was useful or susceptible to use in interstate commerce when the state was admitted to the Union, id.; see also Utah v. United States, 403 U.S. 9, 9-10 (1971).

36. The dissenters stressed the state police power. See Illinois Central, 446 U.S. at 466-67 (Shiras, J., dissenting). The majority not only conceded the federal navigation servitude in its opinion, see id. at 452, but stated that it was expressly provided for in the original agreement between the State of Illinois and Illinois Central, see id. at 448-50.

37. No limiting language appears in the Court’s opinion to suggest that its decision was limited to Illinois law. The Court repeatedly referred to the power of a “state” in the generic sense. The majority most likely assumed its decision applied to all states; this is most clearly evident in its assertion that should the railroad’s position prevail in this case, it “would place every harbor in the country at the mercy of a majority of the legislature of the State in which the harbor is situated.” See id. at 455.
Although the tone of the opinion nearly strikes constitutional chords, the Court thirty years later described the *Illinois Central* decision as merely resting on a "matter of Illinois law.""39

Taking the Court’s subsequent characterization as correct, as we must, we then must fathom the basis for the Court’s declaration of such a novel rule of state law. The Court did not cite any relevant precedent in Illinois law to support the decision. The Court merely referred vaguely to the use of sovereign trust language by state courts in their decisions discussing state ownership of the submerged beds.40 This in turn is followed only by the Supreme Court's naked assertion that the trust arrangement is inalienable.41

The *Illinois Central* decision remains today the "lodestar"42 guiding the modern public trust doctrine. State courts have repeatedly turned to it in the late nineteenth and early twentieth centuries to justify rejecting or at least carefully scrutinizing shortsighted or even corrupt legislative attempts to convey into private hands critical coastal or inland waterway resources.43 And still today courts rely on the *Illinois Central* Court’s reasoning to support their rulings.44

4. Expansion of the Trust Concepts

The notion of sovereign ownership in trust originated but did not remain confined to navigable waters and their beds. Similar language cropped up in judicial opinions describing the source of special governmental authority over wildlife45 and public lands.46 In the case of public lands, the Supreme Court went so far as to suggest that trust duties included the responsibility to ensure that the resources were “not wasted.”47 Perhaps

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38. See id. at 456-57.
39. See *Appleby v. City of New York*, 271 U.S. 364, 395 (1926). In *Appleby* the Court reversed the ruling of the New York Court of Appeals and held that under state law the legislature could grant land under tidal water free of the *jus publicum* and had done so in this case. See id. at 383-84. Accordingly, the Court held that if the state wanted to reassert its sovereign rights, it would first have to buy them back. See id. at 399.
40. See 146 U.S. at 455.
41. See id.
42. Sax, supra note 3, at 489.
47. See *Knight v. United States Land Ass’n*, 142 U.S. 161, 181 (1891); see also Cam-
the most interesting early expansion of the trust concept, however, was its application to city streets. Many courts upheld municipal authority to allow railroads use of the streets and other public trust property. These courts often held that the trust doctrine exempted the city and its commercial licensees from liability for harm caused to adjoining property owners by transit activities. Ultimately many state courts expanded this application of the trust to promote the use of city streets by elevated railroads. Eventually the subsurface for the growing hidden infrastructure of the city was represented in the form of subways, sewer pipes, gas lines, and electric cables. California courts similarly utilized the trust concept to promote economic development, by ruling that growing cities in need of water, such as Los Angeles, had broad sovereign rights to waters within their original land. Thus, the traditional trust doctrine concept in the United States became as much a legal basis for economic expansion as for resource protection.

II. THE PUBLIC TRUST THESIS IN THE COURTS

A. The Public Trust Thesis

Promoters of the public trust doctrine, most prominently Professor Joseph Sax, turned primarily to Illinois Central and its progeny to develop


52. See Selvin, supra note 10, at 1426-28. Although courts generally interpret the sovereign trust authority to exempt the municipality from liability for harm caused when city streets are used for ordinary street purposes, they have split on whether the trust immunity extends to subways. Compare Sears v. Crocker, 184 Mass. 586, 589, 69 N.E. 327, 328 (1904) (no compensation) with In re Board of Rapid Transit, 197 N.Y. 81, 97-98, 90 N.E. 456, 460-61 (1909). Most courts have held that trust immunity does not extend to elevated railroads. See Muhlker v. New York & Harlem R.R., 197 U.S. 544, 570-71 (1904); Lohr v. Metropolitan Elevated Ry., 104 N.Y. 268, 288, 10 N.E. 528, 531 (1887); Story v. New York Elevated R.R., 90 N.Y. 122, 178-79 (1882).

53. In light of the California Supreme Court’s most recent application of the public trust doctrine to limit potentially the water rights of Los Angeles, see National Audubon Soc’y v. Superior Court, 33 Cal. 3d 419, 440, 658 P.2d 709, 723, 189 Cal. Rptr. 346, 360, cert. denied, 464 U.S. 977 (1983), this prior history takes on an especially ironic tone.


55. Selvin, supra note 10, at 1422-37.
the modern public trust doctrine thesis. Professor Sax thought the doctrine possessed or at least potentially possessed three characteristics essential for an effective legal basis for environmental protection: (1) the legal right had to be vested in the public; (2) the right had to be enforceable against the government; and (3) the substance of the right had to be harmonious with environmental concerns. In support of this proposition, his article described at great length the operation of the doctrine in several states over the last century. The descriptions emphasized how courts had invoked the doctrine in certain circumstances to question the validity of executive agency action that threatened trust resources and, in particular, public access to those resources. Judicial techniques included narrowly reading both legislative delegations of authority over trust resources to executive agencies and governmental attempts to convey trust resources to private parties, as well as prohibiting outright certain governmental measures that adversely affected the resource.

The precise legal basis for the doctrine's application, however, remained fairly vague. The doctrine is squarely rooted in property law, yet Professor Sax, for instance, rejected the property rationale as too inflexible. Similarly, despite the substantive overtone of past judicial opinions applying the doctrine (and arguably of portions of Sax's own 1970 article) Sax chose to describe the doctrine as not substantive. According

56. See Sax, supra note 3, at 489.
57. See id. at 474.
58. See id. at 491-531.
59. See, e.g., id. at 494, 502.
60. See, e.g., id. at 502, 504-05, 523, 525-26, 531, 558-59.
61. See id. at 492-502, 527-28.
62. See id. at 485-89.
63. The trust doctrine originated with the notion of sovereign ownership of certain resources in trust for the sovereign's citizens. See supra text accompanying notes 11-29. Controversies over the doctrine historically have concerned ownership boundaries and the existence of public access or easements. See supra notes 26-29, 40-45 and accompanying text; infra notes 138-43 and accompanying text. The Illinois Central opinion is replete with references to property law concepts. See 146 U.S. at 452-54.
64. See Sax, supra note 3, at 478-83. Professor Sax rejected the property rationale, although he acknowledged its common use by the courts, because it could prohibit the government from reallocating trust resources to accommodate changing public needs. See id. at 482; see also Deveney, supra note 10, at 60. Sax has been criticized for this tactic by at least one commentator. Professor Coquillette argues that the trust doctrine would rest more firmly on a property law basis, because that is its historical basis, and rigid prohibitions are not necessarily implicated by property law. See Coquillette, supra note 10, at 810-14.
65. The Supreme Court's Illinois Central ruling is a good example. See supra text accompanying notes 30-41.
66. Sax clearly suggests in several places that the doctrine has significant substantive overtones. At one point, he summarizes the doctrine as disallowing grants of particularly great "amplitude" to private parties. See Sax, supra note 3, at 488-89. At another, Sax argues that judicial inquiry and standards to "minimize" harm to the natural resource must be adequate. See id. at 545. Finally, Sax outlines four guidelines that trigger the
to Sax' 1970 article the trust doctrine "has no life of its own and no intrinsic standards"67 and does not represent "a substantive set of standards."68 Instead, Sax characterized the doctrine as just a "technique"69 or "name"70 courts used to "mend perceived imperfections in the legislative and administrative process"71 or the "democratic process" generally.72

More recently, however, Professor Sax described the doctrine's operation in terms of property rights and did not shy away from attaching substantive standards to judicial application of the doctrine.73 The "central idea" of the public trust doctrine, according to Sax, has become "preventing the destabilizing disappointment of expectations held in common but without formal recognition such as title" and its "function" is to "protect such public expectations against destabilizing changes" as conventional private property is protected.74

B. Public Trust Litigation Since 1970

Since 1970 the public trust doctrine indisputably has had a major impact on litigation brought by parties on behalf of natural resource protection, an impact more than sufficient to call for a close accounting of its rise and an evaluation of its continuing vitality. Numerous parties have relied on modern public trust theories to support their litigation objectives and in turn the courts have adopted those theories. In addition, in many of the states in which public trust precedent was absent or difficult to construct, a spate of law review commentators, most following up on the Sax thesis, have argued for application of the trust doctrine in particular states.75 Other law review progeny have focused not on particular concern of the trust doctrine that are totally aimed at the substance of the controversy. They include: (1) whether the property has been conveyed at less than market value when no obvious reason for the subsidy exists; (2) whether the government has granted to a private interest the authority to make resource allocation decisions that may subordinate public resource uses to private interests; (3) whether an attempt has been made to reallocate diffuse public uses to private uses or public uses of less breadth; and (4) whether the trust resource is being used for a natural purpose, that is, a purpose consistent with the resource's physical characteristics and natural state in the environment. Id. at 562-63.

67. See Sax, supra note 3, at 521.
68. See id. at 509.
69. See id.
70. See id. at 521.
71. See id. at 509.
72. See id. at 521.
73. See Sax, supra note 10, at 192-93.
74. See id. at 188-89 (footnotes omitted).
states, but on furthering specific resource protection or public access goals.\textsuperscript{76} All of this commentary has further increased the doctrine's impact in litigation. Over the last fifteen years in half of the states, approximately one hundred cases have been reported involving the public trust doctrine,\textsuperscript{77} many of which refer explicitly to Professor Sax’ article.


1. Parties Invoking the Trust Doctrine

The cases since 1970 fall into three basic categories: (1) private citizens suing the government for allegedly violating the doctrine;78 (2) private


citizens suing other private parties for allegedly violating the doctrine; 79 and (3) the government suing private parties for allegedly violating the doctrine. 80 The doctrine's early promoters were concerned primarily with promoting the first category of cases, with some related discussion of the need for promoting the second. For this reason, the potential ability of the public trust doctrine to provide private citizens with the needed legal interest to confer standing was of foremost concern. The experience of the last fifteen years reveals that here the doctrine succeeded; courts generally have held that groups of private citizens can maintain actions against governmental and private parties to vindicate public trust doctrine interests. 81

The third area of public trust litigation, involving governmental initiatives based on public trust doctrine authority, however, has been one of the most important areas of development for the doctrine, if not the most important. 82 Governmental enforcement is the principal means by which environmental and natural resource protection standards are enforced. The government's ability to enforce these standards is necessarily tempered by the deference due private property rights in the resources. To the extent that the public trust doctrine suggests that private property rights in trust resources are limited, however, the doctrine effectively advances governmental authority in the resource protection area. Undoubtedly for this reason, one of the major shifts in trust doctrine litigation over the last fifteen years has been the increase in cases brought by the government to enforce the doctrine or, alternatively, brought initially by a private party challenging the validity of a governmental enforcement action based on the sovereign's trust power. 83

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81. See, e.g., Marks v. Whitney, 6 Cal. 3d 251, 261-62, 491 P.2d 374, 381-82, 98 Cal. Rptr. 790, 797-98 (1971); Paepeke v. Public Bldg. Comm'n, 46 Ill. 2d 330, 340-41, 263 N.E.2d 11, 18 (1970). In contrast, it is well settled in the courts that citizens cannot enforce the federal navigation servitude. See Willamette Iron Bridge Co. v. Hatch, 125 U.S. 1, 12 (1888). Roman law provided for “popular injunctions” whereby citizens had the equivalent of standing, regardless of individual damage, to protect public rights in coastal areas. See Deveney, supra note 10, at 23-25.


83. See infra text accompanying notes 157-63.
The most noteworthy developments for the public trust doctrine, however, do not concern the nature of the party invoking the doctrine, but rather the geographical reach of the doctrine and the judicial tests for compliance with the doctrine’s mandate. For the former, the doctrine’s scope has expanded markedly. For the latter, judicial viewpoints have proliferated remarkably on the meaning of the doctrine and, in particular, on what constitutes governmental or private activity inconsistent with trust restrictions.

2. The Geographical Reach of the Trust Doctrine

The public trust doctrine historically concerned public rights (traditionally, commerce, navigation, and fishing) in navigable waters and their submerged beds. Accordingly, the geographical application of the doctrine turned on the meaning of “navigable water.” Although both the federal navigation servitude and state sovereign ownership share common roots, the definition of navigability differs for each. The federal expression of the trust doctrine—the navigation servitude—applies to waters that are “navigable in fact,” that is, used or susceptible to being used in their natural condition or with reasonable improvements for purposes of trade or commerce. State sovereign ownership of submerged beds under the equal footing doctrine similarly applies to waters that are “navigable in fact,” but with the added restriction that navigability is determined by considering the condition of the waters only at the time the state was admitted to the Union. Both of these inquiries raise matters of federal law.

The geographical reach of the public trust doctrine has expanded both within the domain of waters and to other resources, although the geographical reach of the navigation servitude has not extended in a parallel manner. Gradually, application of the public trust doctrine has shifted to include navigable waters that do not meet the federal test of navigable...
ity for the purposes of state sovereign title, but instead satisfy the lesser state law standard of navigability. The result has been a dramatic movement in the geographical application of the trust doctrine away from submerged navigable beds to water resources generally. Recent judicial applications of the doctrine to water rights generally has reflected this trend.

Abandoning a jurisdictional test rooted in sovereign resource ownership has not led to abandoning the operations of the doctrine historically bound up in notions of property law and equitable trusts. For instance, although the original roots of the state’s duty as trustee were linked to its sovereign ownership of the beds, courts have nonetheless found the duties in the absence of state ownership. Perhaps even more remarkably, the courts have not necessarily read this geographical expansion as having any impact on the relationship of the taking issue to the public trust doctrine. A major factor promoting the public trust doctrine as a sound means to achieve natural resource goals has been the argument that asserting the doctrine creates no problems of unconstitutional takings. The waters is set out in United States Army Corps of Engineers regulations. See Definition of Navigable Waters of the United States, 33 C.F.R. §§ 329.1-.16 (1985).


92. Indeed, in the Supreme Court's most recent public trust case, Summa Corp. v. California ex rel. State Lands Comm'n, 104 S. Ct. 1751 (1984), all the parties and the Court assumed that the trust applied only to submerged beds that the state owned in its sovereign capacity under the equal footing doctrine. The only issue in Summa was whether the doctrine also applied to property when never in sovereign ownership because it had been the subject of a grant by Mexico to a private party prior to California's admission to the Union. See id. at 1754-56. The clear thrust of the entire litigation was that the trust doctrine applied to beds that the state actually owned in its sovereign capacity or that otherwise would have been owned if they were not the subject of a prior sovereign grant. No members of the Court contended that the public trust doctrine would ever apply to other categories of submerged lands.

93. See supra note 90.

94. See Circiacy-Wantrup & Bishop, supra note 76, at 725-26; Wilson, Private Property and the Public Trust: A Theory for Preserving the Coastal Zone, 4 UCLA J. ENVTL. & POL. 57, 91 (1984); Comment, Can New York's Tidal Wetlands Be Saved? A Constitutional and Common
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doctrine, courts and commentators alike have argued, merely reflects the assertion of public rights that preexist any private property rights in the affected resource. Its application, therefore, cannot be deemed a taking of private property. 95 Without the ownership rationale, one would have expected the taking problem necessarily to reemerge. 96 That the public trust doctrine has expanded, without a concomitant reassertion of the taking issue, apparently confirms the validity of promoters' predictions that the doctrine was capable of adapting to broader environmental concerns.

The doctrine's expansion to resources other than water resources evinces even greater confirmation of the modern public trust thesis. First spreading within the aquatic environment to include marine life, 97 and sand and gravel in water beds, 98 the trust doctrine has steadily emerged from the watery depths to embrace the dry sand area of a beach, 99 rural parklands, 100 a historic battlefield, 101 wildlife, 102 archaeological remains, 103 and even a downtown area. 104 Litigants, arguing for even further extensions, have gone so far as to assert that the doctrine should apply to air

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95. "[P]arties acquiring rights in trust property generally hold those rights subject to the trust, and can assert no vested right to use those rights in a manner harmful to the trust." National Audubon Soc'y v. Superior Court, 33 Cal. 3d 419, 437, 658 P.2d 709, 721, 189 Cal. Rptr. 346, 358, cert. denied, 464 U.S. 977 (1983); see also Sax, supra note 10, at 186-89. This type of argument is akin to that advanced by the federal government in cases involving the federal navigation servitude. See United States v. Gerlach Live Stock Co., 339 U.S. 725, 736 (1950). See generally Note, Federal-State Conflicts Over the Control of Western Waters, 60 COLUM. L. REV. 967, 979 (1960).


resources\textsuperscript{105} and cemeteries.\textsuperscript{106} One state supreme court recently has construed the trust doctrine to apply to all natural resources, including air and water, and, consequently, to govern state agency decisions that implement state hazardous waste control legislation.\textsuperscript{107} Although the court gleaned these trust principles from constitutional and statutory law, the court explicitly relied as well on a separately identified "public trust concept."\textsuperscript{108} Other courts have declined invitations to extend the doctrine to an alley adjoining a junkyard\textsuperscript{109} and to man-made showers and bathhouses on the seashore.\textsuperscript{110}

3. Restrictions on Governmental Actions Adverse to Trust Concerns

Advocates of the public trust doctrine have been concerned primarily with the ability of the doctrine to impose enforceable restrictions on the authority of the sovereign to act in a manner potentially harmful to the trust resource.\textsuperscript{111} Predictions that the doctrine would provide courts with the needed legal basis to restrict such governmental acts have borne out. Still, the doctrine's precise meaning to those courts has varied considerably. Some courts diverge from the mainstream to find that the doctrine places an affirmative duty on the government to protect or conserve trust resources in the first instance.\textsuperscript{112} Most, however, find it restricts governmental actions that adversely affect trust concerns. Within this latter category, courts differ considerably over the precise standards to apply to the challenged governmental action. The decisions gravitate around three types of standards: (1) a requirement that the challenged governmental action satisfy a public trust purpose;\textsuperscript{113} (2) a requirement that the

\begin{itemize}
\item \textsuperscript{106} See Washington Metro Area Transit Auth. v. One Parcel of Land, 514 F.2d 1350, 1352 (D.C. Cir. 1975).
\item \textsuperscript{107} See Save Ourselves, Inc. v. Louisiana Envtl. Control Comm'n, 452 So. 2d 1152, 1154 n.102, 1157 (La. 1984).
\item \textsuperscript{108} See id. at 1154.
\item \textsuperscript{109} See Mamolella v. First Bank, 97 Ill. App. 3d 579, 582-83, 423 N.E.2d 204, 206-07 (1981).
\item \textsuperscript{111} This focus on suits against the government is evident, for instance, throughout Sax' article and is most clearly stated in the list of three characteristics the doctrine must possess to be meaningful. See supra note 66 and accompanying text. One of those characteristics is that the public right must be "enforceable against the government." Sax, supra note 3, at 474.
\item \textsuperscript{112} See, e.g., State v. Zimring, 58 Hawaii 106, 121, 566 P.2d 725, 735 (1977); People of Smithtown v. Poveromo, 71 Misc. 2d 524, 534, 336 N.Y.S.2d 764, 776-77 (Suffolk County Ct. 1972); Lower Colo. River Auth. v. Texas Dep't of Water Resources, 883 S.W.2d 873, 875, 882 (Tex. 1994).
\item \textsuperscript{113} See infra text accompanying notes 116-28.
\end{itemize}
disputed action occur only after consideration of any adverse impact on the trust resource and then only if such impact is either minimal or necessary; and (3) a requirement that if the action challenged is that of an executive branch agency, the proposed action has specific legislative authorization.

a. Requirement of a Public Trust Purpose

For some courts, the requirement of some public trust purpose is satisfied quite easily. These courts simply look for some relationship between the proposed governmental action and a legitimate public purpose. This standard apparently does not require significantly more than would the normal police power inquiry for a valid public purpose. Other courts, however, have gone further and required the public purpose to have some connection with the substantive concerns of the trust doctrine. For some judges, this means a relation to the traditional public trust purposes—commerce, navigation, and fishing. For others, the requirement extends further and calls for a relation to the resource in its natural condition. For example, some courts have suggested that the proposed use of a navigable waterway or its banks should bear some direct relation to and be consistent with the aquatic characteristics of the resource.

In either event, the tests have proved susceptible to flexible application. Courts have found diverse activities such as production of oil and construction of bridges, a YMCA, restaurants, bars, and a shopping


115. *See infra* text accompanying notes 149-54.


122. *See* People v. City of Long Beach, 51 Cal. 2d 875, 879-80, 338 P.2d 177, 179 (1959).
complex to meet these heightened trust standards. More recently, one court concluded that developing a public trust water resource to build an airport runway does not offend trust concerns, with one member of the court reasoning that the airport would promote "commerce" and possible air "navigation." So too, highways, driving ranges, and shopping malls have in recent years passed public trust muster. One court even ruled that granting licenses to commercial enterprises for areas of a public lake does not run afoul of public trust purpose restrictions.

b. Requirement of Prior Consideration and Minimization of Adverse Impacts on Trust Values

The most meaningful construction the courts have given the public trust doctrine has been to require the government to consider the adverse impacts of a proposed action on trust resources. The impact of this consideration requirement is at its greatest when coupled with the additional mandate that only minimal or "necessary" harm is permissible. Courts have held that consideration of trust concerns occurs in advance of proposed governmental action, requires prior comprehensive resource planning or specific cost/benefit balancing, and includes a continuing duty to reconsider when circumstances and knowledge change. The consideration requirement asks courts to scrutinize more carefully the basis of administrative agency decisions when trust values are at stake.

Some courts add the restriction that the government is always barred from inflicting more than a modicum of harm to trust interests. This restriction is expressed in several forms. Most courts, borrowing language

123. See Martin v. Smith, 184 Cal. App. 2d 571, 578, 7 Cal. Rptr. 725, 728 (1960). Professor Sax not only recognized this phenomenon, but apparently endorsed it, arguing that the water-relatedness requirement may be satisfied by cafes, restaurants, motels, hotels, and the like. See Sax, supra note 3, at 531-32, 535.
133. Save Ourselves, Inc. v. Louisiana Env'tl. Control Comm'n, 452 So. 2d 1152, 1159-60 (La. 1984).
from the Illinois Central decision,134 have required that there be no "substantial impairment" of the trust resource.135 Other courts have stated that only a "small percentage" of the trust resource136 may be harmed or that only "limited encroachments" may be made on the resource.137 Finally, many courts have held that the public trust doctrine requires that the public have access to the resource, regardless of the public or private character of the nominal owner of the resource.138 Accordingly, even if governmental alienation of a coastal shoreline into private hands is otherwise permissible, these courts would rule that such alienation must not prejudice the public right of access to the resource.139 Beach access cases have been a frequent subject of public trust litigation over the last fifteen years as courts have extended trust interests to include recreation,140 the temporary use of adjacent private property for the placement of a beach towel,141 even to the use of municipal toilet facilities.142 On the basis of the doctrine, moreover, state courts have struck down laws restricting public access to beach facilities.143

The courts, in more recent decisions, have recognized that destruction of trust resources is sometimes necessary, and therefore, they will

134. See 146 U.S. at 453 ("without any substantial impairment of the public interest in the lands and waters remaining").


137. See, e.g., Hixon v. Public Serv. Comm'n, 32 Wis. 2d 608, 618, 146 N.W.2d 577, 582 (1966).


140. See Selvin, supra note 10, at 1439-40; Stevens, supra note 10, at 221-23. But see Livingston, supra note 75, at 681-82 (Virginia public trust does not extend to recreation in navigable waters).


impose a public trust standard that calls for heightened administrative justification for the action. This standard is implemented, for instance, by reversing the presumption of agency regularity and expertise, allowing only "necessary" harmful activities, or requiring that the government take all "reasonable" or "feasible" steps to minimize the harm. Each of these standards by their terms stops short of declaring an absolute environmental quality standard.

c. Requirement of Clear Statutory Authority to Impinge on Trust Values

The third type of public trust standard the courts have utilized to check governmental activities that threaten trust resources requires strict statutory construction of legislative delegations of authority to administrative agencies. Professor Sax emphasized particularly this technique. The underlying substantive thrust of this standard holds that only the legislature can properly decide to have the government take action that may substantially harm trust resources, because the legislature most closely mirrors the will of the public. Although a few courts have interpreted this mandate literally and have stated that only the legislature can interfere with trust interests, most permit the power to be delegated, requiring only varying degrees of clarity when the legislature delegates authority to the relevant administrative agency. The general test is whether the legislative delegation of authority to the agency is clear, express, and specific. Specificity may require that the legislature identify the trust property at issue and expressly acknowledge the existing use of the resource that the

144. This assumption of administrative irregularity apparently was an explicit object of Professor Sax's public trust thesis, see Sax, supra note 3, at 490. and was the focus of much scholarly criticism, see Jaffe, Book Review, 84 Harv. L. Rev. 1562, 1564-69 (1971); Tarlock, Book Review, 47 Ind. L.J. 406, 411-14 (1972); see also Butler & Cameron, Book Review, 1 Ecology L.Q. 228, 231 (1971).

145. See Sax, supra note 3, at 514.


149. See Sax, supra note 3, at 542-43.


151. See State Dep't of Nat. Resources v. City of Haines, 627 P.2d 1047, 1052 (Alaska 1981); City of Berkeley v. Superior Court, 26 Cal. 3d 515, 528, 606 P.2d 362, 367, 162 Cal. Rptr. 327, 332, cert. denied, 449 U.S. 840 (1980); cf. Gulf Oil Corp. v. State Mineral Bd., 317 So. 2d 576, 586 (La. 1974) (statutes should be interpreted in light of state's public policy). The United States is not unique in reading narrowly conveyances of trust property. Under German dynastic law, property the Crown held in its sovereign capacity, such as artwork, could be disposed of only with the express authorization of the Diet (Parliament). See Kunstsammlungen Zu Weimar v. Elicofon, 678 F.2d 1150, 1153-54 (2d Cir. 1982). Recently, one commentator has argued that public trust-like principles should be applied to art. See Comment, Public Interest in Art, supra note 76, at 129-36.
proposed governmental action will harm.\textsuperscript{152} The Wisconsin courts have further required that legislative delegations of authority to harm trust resources must be delegations to governmental bodies of statewide concern.\textsuperscript{153} This restriction’s purpose is to minimize the possibility of parochial interests neglecting broader statewide interests.\textsuperscript{154}

4. Promotion of Governmental Authority

As discussed above,\textsuperscript{155} recent developments in the public trust doctrine arena have not been confined to suits in which the private citizen is the plaintiff asserting the doctrine and the government is the unwilling defendant resisting the trust’s application. Indeed, the proponent of the trust doctrine has quite often been the government. Typically, the government has argued that the public trust doctrine expands sovereign authority over natural resources covered by the doctrine. In particular, the government asserts that the doctrine limits the nature of valid private property rights in those resources, rendering permissible governmental measures that impinge on those private interests.\textsuperscript{156}

Many courts have adopted this theory of enhanced sovereign authority. These courts refer to the sovereign’s greater regulatory authority over trust resources as the “great police power of the people.”\textsuperscript{157} Some courts, possibly in anticipation of takings challenges to strict governmental resource protection measures, have ruled that there are no “vested rights” to act contrary to the trust.\textsuperscript{158} Courts also emphasize that all conveyances of trust resources to private parties are subject to the sovereign’s retained supervisory authority;\textsuperscript{159} private property rights in the resource are “impressed” with the public trust,\textsuperscript{160} see simple absolute notwithstanding.

\begin{thebibliography}{99}
\bibitem{footnote}See \textit{Sax, supra} note 3, at 521-23.
\bibitem{footnote}See \textit{supra} text accompanying notes 82-83.
\bibitem{footnote}See \textit{id}.
\bibitem{footnote}See \textit{People v. California Fish Co.}, 166 Cal. 576, 588, 138 P. 79, 84 (1913); see
\end{thebibliography}
Courts have used the trust doctrine in a variety of other ways to enhance state enforcement efforts. For example, several courts have held that the doctrine confers standing on the government to seek injunctive relief to prevent threats to trust resources, or when the harm has already occurred, to sue for monetary relief. At least one court has held that the doctrine eliminates any laches defense to a state enforcement action based on the trust.

III. THE PAST AND FUTURE ROLES OF THE PUBLIC TRUST DOCTRINE

The persistent role that the public trust doctrine has played in natural resources and environmental law over the past fifteen years has established the doctrine as an important subject for study and academic inquiry. Whether the doctrine is a viable legal concept worthy of continued advancement by public spirited litigants, however, is not answered by the doctrine's persistence alone. The remainder of this Article addresses this more fundamental question.

Assessment of the future value of the public trust doctrine must start with the candid premise that the doctrine rests on legal fictions. Notions of "sovereign ownership" of certain natural resources and the "duties of the sovereign as trustee" to natural resources are simply judicially created shorthand methods to justify treating differently governmental transactions that involve those resources. Like most legal fictions, the purpose of the public trust doctrine at various periods of American legal history and in recent years has been to avoid judicially perceived limitations or consequences of existing rules of law. The precise object of concern varied; in Illinois Central, it was corrupt or shortsighted state legislatures; in the nineteenth-century water rights and city street matters, it was inadequacies in absolute private property rights that denied public needs or private tort remedies that threatened municipal development; more recently,
the source of worry in the environmental arena has, as Professor Sax put it, been with "insufficiencies of the democratic process."{168}

To be sure, courts and commentators alike invariably refer to the ancient law origins of the doctrine,{169} thereby suggesting that the legal basis upon which they rely is long settled and not a matter of judicial creation. Still, even assuming the doctrine existed in ancient times, which may be doubtful,{170} the courts have made no effort to discover the doctrine's ancient bounds or to remain confined to those bounds. Indeed, the thrust of current "protrust" commentary is to the contrary;{171} the viability of the ancient roots is largely irrelevant to the doctrine's current application, apart from presenting "seeds of ideas."{172}

Characterizing the public trust as a "legal fiction," however, is not intended, by itself, to suggest a negative verdict on the doctrine's worth or vitality.{173} Although undoubtedly the term "fiction" has negative connotations, it is far too late in the day to condemn legal fictions as mere "fictions" and ignore that they quite often play a significant role in the law's development, as they must for any sort of system that strives for comprehensiveness in the face of limited and changing knowledge.{174} As Professor Lon Fuller has described in his classic work on legal fictions, they "are, to a certain extent, simply the growing pains of the language of the law."{175}

Instead of immediately casting the fiction aside, recognizing the fictional nature of the trust doctrine is necessary to frame the debate on the doctrine's continued usefulness in natural resources law. Just as the need for legal fictions arises in the wake of changing circumstances that strain existing legal norms, so too the need dissipates when, over time, the fabric of the law is woven in a more coherent and systematic fashion in response to those initial changes. Or, alternatively, new changes may occur that similarly remove the initial justification for the fiction's creation. In this manner, a time comes when the fiction is no longer necessary. Even more fundamentally, the fiction's continued use obscures analysis and thus impedes the law's coherent development.{176} On this basis, the future of the public trust doctrine in natural resources law must be assessed.

168. Sax, supra note 3, at 521.
170. See supra text accompanying notes 11-20.
171. See, e.g., Stevens, supra note 10, at 195-98; Wilkinson, supra note 76, at 298-304.
172. Sax, supra note 3, at 485.
173. In contrast, Bentham, according to Professor Fuller, took just such a harsh stand on the use of fictions in law: "'Fiction of use to justice? Exactly as swindling is to trade.'" L. Fuller, supra note 164, at 3 (quoting BENTHAM WORK at vii, 283 (J. Bowring ed. 1843)).
174. L. Fuller, supra note 164, at 3 (quoting BENTHAM WORK at vii, 283 (J. Bowring ed. 1843)).
175. See id. at 22.
176. Id. at 70, 121-22.
Assessing the public trust doctrine on this basis leads to the conclusion that the day of “final reckoning”\(^{177}\) for the doctrine is here, or soon will be, and reliance upon it is no longer in order. As shown in the following sections, the law of standing, tort law, property law, administrative law, and the police power have all evolved in response to increased societal concern for and awareness of environmental and natural resources problems and are weaving a new and unified fabric for natural resources law. Whether these developments are viewed as totally independent of the doctrine or, alternatively, as somehow having subsumed the doctrine’s principles does not matter. The conclusion is the same from either perspective: much of what the public trust doctrine offered in the past is now, at best, superfluous and, at worst, distracting and theoretically inconsistent with new notions of property and sovereignty developing in the current reworking of natural resources law. Section IV will consider in detail these adverse consequences of continued reliance on the doctrine.\(^{178}\)

A. The Law of Standing and the Public Trust Doctrine

The law of standing illustrates the doctrine’s current demise.\(^{179}\) Promoting the public trust doctrine was in part based on its potential for providing citizens with the “legal interest” or “legal right” necessary to confer standing to bring a lawsuit.\(^{180}\) At the time Professor Sax wrote his article, a litigant had to demonstrate an injury to a legal interest to possess standing to sue, particularly with regard to judicial review of governmental agency action.\(^{181}\) The legal right, moreover, had to be either “one of property, one arising out of contract, one protected against tortious invasion, or one founded on a statute which confers a privilege.”\(^{182}\) Whether concern about environmental harm or waste of natural resources satisfied this standing requirement was in serious doubt; at least it had not been satisfactorily resolved in favor of environmental interests. The public trust doctrine, by providing a formal legal right to environmental quality, addressed the standing concern.

\(^{177}\) Id. at 121.
\(^{178}\) See infra text accompanying notes 368-476.
\(^{179}\) The issue of standing to sue asks whether a particular plaintiff is entitled to have a court consider the merits of a dispute. L. Tribe, American Constitutional Law 79 (1978). It is a question of justiciability, derived mostly from article III of the Constitution, which extends judicial power only to “cases” or “controversies.” see U.S. Const. art. III, § 2, but is also derived partly from limitations that the judiciary has self-imposed. L Tribe, supra, at 52-53. Standing is thus related to other concepts of justiciability, including those concerning advisory opinions, political questions, ripeness, and mootness, but it is theoretically distinct in its focus on the plaintiff, rather than on the issues presented. Id. at 79.
\(^{180}\) See Coquillette, supra note 10, at 814-16; see also supra text accompanying note 57.
\(^{182}\) Id. at 137-38.
Hindsight teaches, however, that this aspect of the doctrine was not needed. Soon after the Sax article was published, the Supreme Court dramatically liberalized standing requirements, responding in large part to the need to recognize the legitimacy of the new type of injury reflected in environmental cases. The Court abandoned the legal interest test on the ground that it improperly based a litigant's right to sue on a preliminary determination of the merits and read the Constitution's case or controversy requirement to restrict federal court jurisdiction to cases in which a plaintiff alleges an "injury in fact, economic or otherwise." Justice Douglas, writing for the majority in Data Processing, stressed that the requisite injury could encompass injury to a broad range of values, including aesthetic, conservational, and recreational interests.

In a host of subsequent cases involving allegations of environmental injuries, the Court further opened the avenues to these lawsuits. Although denying standing to the Sierra Club in 1972 for the lack of any allegations that developing a national forest would affect any of the club's activities, the Court stressed that the Sierra Club would clearly possess standing by suing in its own name on behalf of its members who were injured in fact. When stating in another case that the injury must be personal, the Court added that "standing is not to be denied simply because many people suffer the same injury." On that ground the Court upheld standing even though "all persons who utilize the scenic resources of the country, and indeed, all who breathe its air" shared the alleged harm. Finally, in environmental cases, the Court has liberally construed the standing requirement that a fairly traceable causal connection must exist between the defendant's alleged illegal conduct and the plaintiff's injury to ensure that the relief sought will redress the injury. In one case, the Court

184. See id. at 153.
186. See 397 U.S. at 154.
191. See id.
found standing when the plaintiffs alleged that a proposed across-the-board railroad freight fare increase would result in increased pollution because it would reduce the cost-effectiveness of recycling. In another, the Court found the required causal nexus was met when plaintiffs alleged that a federal statute limiting liability in the event of a major nuclear accident would lead, through a chain of causation, to potential water pollution from a proposed nuclear power plant.

The law of standing, in short, has dramatically evolved to embrace the particular characteristics of a case or controversy involving environmental injuries, the lack of a formal legal right and the often attenuated nature of the causation chain in environmental cases being two typical characteristics. The rationale of the trust doctrine was unnecessary. Indeed, the doctrine’s emphasis on formal legal rights is inconsistent with the rationale of the modern standing decisions that have fostered environmental protection goals.

B. Nuisance Law and the Public Trust Doctrine

Examining nuisance law similarly casts doubt on the continuing role of the public trust doctrine. Promoters of the public trust doctrine such as Professor Sax rejected nuisance law in favor of the public trust doctrine because the former was “encrusted” with antiquated requirements. The strict limits on private citizen suits based on public nuisance law, historically a basis only for suits brought by the attorney general, and the traditional relationship between nuisance and actions irrelevant to natural resource issues, such as suits against brothels and gambling dens, were two explicit concerns.

Neither of these concerns with the limits of nuisance law, however, was realized. First, the substantive scope of both public and private nuisance law has quite willingly embraced environmental and natural resource concerns. In public nuisance cases, courts have had no difficulty find-

195. According to the Restatement (Second) of Torts, a public nuisance is the “unreasonable interference with a right common to the general public.” See Restatement (Second) of Torts § 821B (1977). A private nuisance is a non trespassory invasion of another’s interest in the private use and enjoyment of land.” Id. § 821D. See generally PROSSER AND KEETON ON THE LAW OF TORTS §§ 86-91, at 616-54 (W. Keeton 5th ed. 1984) [hereinafter cited as PROSSER AND KEETON].
196. See Sax, supra note 3, at 485 n.45.
197. See id.
198. This is not surprising. Courts historically have treated the public trust doctrine and nuisance law as equivalents in the context of interference with public rights in navigable waterways. See, e.g., United States v. Dixie Carriers, Inc., 462 F. Supp. 1126, 1130 (E.D. La. 1978), aff’d, 627 F.2d 736 (5th Cir. 1980); Hartford Elec. Light Co. v. Water Resources Comm’n, 162 Conn. 89, 101, 291 A.2d 721, 729-30 (1971); Mamolella v. First Bank, 97 Ill. App. 3d 579, 582-83, 423 N.E.2d 204, 206-07 (1981); Dumont v. Speers, 245 A.2d 151, 155 (Me. 1968). Commentators also have pointed out the close relationship
ing that threats to the natural environment and to public health from environmental pollution implicate "rights common to the public." The Restatement (Second) of Torts quite clearly draws the connection between public nuisance doctrine and environmental protection. Moreover, the relevance of environmental protection to private nuisance law is axiomatic. Private nuisance law by definition restricts activities that interfere with the use and enjoyment of land. Land is such a fundamental natural resource that most environmental threats, whether directed at natural resources or public health, can easily be read as interfering with the land's use and enjoyment, and thereby potentially raising private nuisance claims.

The second concern, that only the attorney general could maintain a public nuisance lawsuit, similarly was not realized. Courts have not confined public nuisance lawsuits to the domain of the attorney general.

between the two doctrines in the natural resource area. See M. Hale, supra note 20, at 338-39 (King does not have power to convey public rights in navigable waters to private parties because he possesses no power to license a nuisance); W. Rodgers, Handbook on Environmental Law § 2.16, at 175, 177 (1977) ("For the most part, public nuisance is the inland version of the public trust doctrine although, not surprisingly, history records public trust theory being applied in the classical nuisance context, nuisance theory being applied in the classical public trust context, and both theories being applied together.") (footnotes omitted); Deveney, supra note 10, at 46.


200. "Some courts have shown a tendency ... to treat substantial interference with ... established principles of conservation of natural resources as amounting to a public nuisance. [The Restatement language] is not intended to set restrictions against developments of this nature." Restatement (Second) of Torts § 821B comment e (1977). Many commentators have promoted use of nuisance doctrine to further environmental protection and resource conservation goals. See, e.g., Bryson & Macbeth, Public Nuisance, The Restatement (Second) of Torts, and Environmental Law, 2 Ecology L.Q. 241, 281 (1972); Warren, Nuisance Law as an Environmental Tool, 7 Wake Forest L. Rev. 211, 227-29 (1971); Comment, Obstruction of Sunlight as a Private Nuisance, 65 Calif. L. Rev. 94, 106 (1977); Comment, Federal Jurisdiction, Environmental Law, Nuisance, State Ecological Rights Arising Under Federal Common Law, 1972 Wis. L. Rev. 597, 612.


202. A recent case is illustrative. In Miller v. Cudahy Co., 21 Env't Rep. Cas. (BNA) 1549 (D. Kan. 1984), the district court awarded 33 plaintiffs—farmers and their families—$3 million in damages for harm caused to area groundwaters by a salt company. The court ruled that the plant was primarily a private nuisance, but that "[a]lements of a public nuisance also mingle in the controversy." See id. at 1571. The court added that the defendant company was liable for an additional $10 million in punitive damages. See id. at 1573.
Rather, the rule in most jurisdictions has been that a private citizen must allege some "special injury" to maintain a public nuisance action.\(^{203}\) Although courts have occasionally dismissed public nuisance lawsuits brought by citizens for lack of special injury,\(^{204}\) courts generally have relaxed the injury requirement, much as the Supreme Court has relaxed the "generalized grievance" limitation on standing in environmental cases.\(^{205}\)

Some courts rely on the relationship of public nuisances to private nuisances to minimize the "special injury" requirement. Specifically, these courts hold that a citizen who can allege a private nuisance injury satisfies any special injury requirement necessary to maintain a public nuisance action.\(^{206}\) In any event, the clear trend in the law, endorsed by the Restatement, is to dispose of any special injury requirement when the private litigant's public nuisance action is seeking to enjoin or abate the nuisance, as opposed to seeking money damages.\(^{207}\) Private litigants need satisfy only the normally applicable standing requirements,\(^{208}\) which the courts, as discussed above, have relaxed in environmental cases.\(^{209}\)


\(^{205}\) Among its stated prudential limitations on standing, the Supreme Court has stated that "when the asserted harm is a 'generalized grievance' shared in substantially equal measure by all or a large class of citizens, that harm alone normally does not warrant exercise of jurisdiction." See Warth v. Seldin, 422 U.S. 490, 499 (1975). This limitation appears to have carried little weight in the Court's standing cases concerning environmental rights. See United States v. SCRAP, 412 U.S. 669, 687 (1973) ("standing is not to be denied simply because many people suffer the same injury"); supra text accompanying notes 190-91.


\(^{207}\) "In order to . . . enjoin or abate the public nuisance, one must . . . have standing to sue as a representative of the general public, as a citizen in a citizen's action or as a member of a class in a class action." Restatement (Second) Torts § 821C(2) (1977). See generally W. Rodgers, supra note 198, at 105-06.


\(^{209}\) See supra text accompanying notes 187-94.
Finally, underlying the rise of nuisance law is a basic judicial reformulation of the relationship between tort and property law in the natural resources context. This reformulation is inconsistent with the general thrust of the public trust doctrine. In the past, the outcome in nuisance cases was often predetermined by judicial reliance on property-based rules that purportedly dictated the rights of various parties in the use of their respective property.210 With increasing frequency, courts have abandoned rigid property-based rules in favor of balancing the competing considerations, including both individual equities and broad societal interests, of each party's legal position.211 A party's entitlement to the protection of nuisance law no longer turns so much on the possession of an identifiable "legal interest" that has been harmed. Totally apart from these legal labels, the precise gravity and nature of the individual's injury is relevant to the judicial inquiry. Just such an approach to nuisance law recently led one court to conclude that an individual's economic interest in access to solar energy merited some protection in a nuisance action brought against a neighbor who threatened to cut off access.212 Previously, courts had ruled that


211. With industrialization and urbanization, conflicts occurred increasingly between property owners and it became clear that applying absolute property rules could no longer resolve those conflicts. It was necessary to consider the interest of society and not just the private parties in formulating a legal rule. See Coquillette, supra note 10, at 778-79; Donahue, The Future of the Concept of Property Predicted from Its Past, in Property: NOMOS XXII 26, 33 (J. Pennock & J. Chapman eds. 1980); Horwitz, supra note 210, at 290; Philbrick, Changing Conceptions of Property in Law, 86 U. Pa. L. Rev. 691, 724 (1938). See generally Calabresi & Melamed, Property Rules, Liability Rules & Inalienability: One View of the Cathedral, 85 HARV. L. REV. 1089 (1972) (various legal relationships integrated in a model that suggests solutions to pollution problem). A demise in the formalistic approach to the protection of contractual rights occurred for many of the same reasons. See Note, Tortious Interference of Contractual Relations in the 19th Century: The Transformation of Property, Contract, and Tort, 93 HARV. L. REV. 1510, 1537-38 (1980); see also Holmes, Privilege, Malice, and Intent, 8 HARV. L. REV. 1, 3 (1894) (external standards rising in tort law). There too, the courts began to balance the competing interests, including the interests of society in alternative resolutions, to resolve conflicts. See Carpenter, Interference with Contract Relations, 41 HARV. L. REV. 728, 745-46 (1928). In the past, this balance has often led to denial of injunctions against polluting businesses because of the adverse socioeconomic consequences of a shutdown, see, e.g., Boomer v. Atlantic Cement Co., 26 N.Y.2d 219, 228, 257 N.E.2d 870, 875, 309 N.Y.S.2d 312, 319 (1970), but changing social attitudes toward pollution have rendered shutdown more palatable, see, e.g., Aberdeen v. Wellman, 352 N.W.2d 204, 205-06 (1984) (permanent injunction on operation of gravel and road construction company as public nuisance).

212. See Prah v. Maretti, 108 Wis. 2d 223, 240, 321 N.W.2d 182, 191 (1982). In extending the protection of nuisance law to solar access, the Prah court considered the three policy justifications that historically had justified a denial of protection and found each obsolete. All three related more to the concerns of society than to those of the individual. The first concern was the traditional notion that a landowner had the right to use her property as long as she did not cause physical damage to a neighbor. The Prah court rejected that rationale, looking to how "society has increasingly regulated the use of land by the landowner for the general welfare." See id. at 236, 321 N.W.2d at 189. The second
nuisance law provided no protection because an individual had no legally protected interest in solar energy. 213

The public trust doctrine, however, is still rooted in the old property-law terminology now being rejected by modern nuisance analysis. Consequently, as with standing, relying on the doctrine is not only unnecessary when nuisance law could better achieve the same objectives, but also the doctrine's formalism is theoretically inconsistent with the advances in tort law that aid environmental protection and resource conservation goals.

C. Conceptions of Sovereignty and Property and the Public Trust Doctrine

Advances in standing and nuisance law, however, do not go to the heart of the public trust doctrine's shortcomings. At bottom, the trust doctrine is premised on a view of the nature and role of the sovereign that has little in common with the current style of government, at least in the areas of environmental protection and natural resource conservation. In particular, the doctrine assumes that absent its sovereign ownership and trustee duties, governmental powers over important natural resources would be inadequate and governmental accountability to the public for its decisions affecting those resources too limited. Recent developments in natural resources and environmental law question both of these assumptions.

To be sure, governmental power to protect the environment is not currently absolute, nor is governmental accountability for its environmentally destructive activities total. A negative assessment of the continuing utility of the public trust doctrine does not require either such extreme result. The relevant inquiry looks to the net impact of the doctrine. Here, that means asking whether in the face of recent changes in the nature and scope of governmental power, the doctrine continues to play a significant, independent role. Here again, the trust doctrine falls short.


There being, then, no legal right to the free flow of light and air from the adjoining land, it is universally held that where a structure serves a useful and beneficial purpose, it does not give rise to a cause of action, either for damages or for an injunction under the maxim sic utere tuo ut alienum non laedas, even though it causes injury to another by cutting off the light and air and interfering with the view that would otherwise be available over adjoining land in its natural state, regardless of the fact that the structure may have been erected partly for spite.
1. The Rise of the Modern Police Power State
   
a. Expansion of Police Power Authority

First, there currently is little room or need for the public trust doctrine to play a meaningful role in promoting sovereign authority over environmental quality. The trust doctrine arose at a time, long since gone, when sovereign power depended on ownership and, accordingly, when courts interpreted the scope of governmental police powers quite narrowly. Then, the validity of a governmental police power restriction that adversely affected private property expectations depended on fictional categories. For example, if a court deemed the private property a "qualified" property or a property "affected with the public interest," then the court would uphold the governmental restriction, regardless of the restriction's impact. Courts reasoned that these properties were the subject of a limited grant from the private party back to the government. Courts similarly saw governmental control over natural resources as resting on sovereign ownership of those resources.

Today, the extent of sovereign authority does not turn on such strained fictions of property law, which are all contemporaries of the public trust doctrine. It is now well settled that the police power is the most fundamental source of governmental authority to prevent needless environmental harm and related risks to human health and welfare. To be sure, the

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215. E. Freund, The Police Power § 402, at 422 (1904). For example, courts considered dogs to be "qualified property" and on that basis upheld governmental police power measures requiring licenses for dogs and allowing extermination without legal process or a right of damages for failure to comply with those requirements. E.g., Sentell v. New Orleans & C. R.R., 166 U.S. 698, 701-02 (1897); Mayor of Hagerstown v. Witmer, 86 Md. 293, 300, 301 (1897). See generally E. Freund, supra, §§ 21, at 16-17. The notion of qualified property in natural resources is also expressed in 2 W. Blackstone, Commentaries *395.

216. E. Freund, supra note 215, § 402, at 422.

217. When, therefore, one devotes his property to a use in which the public has an interest, he, in effect, grants the public an interest in that use and must submit to public control for the common good, to the extent of the interest he has thus created. See Munn v. Illinois, 94 U.S. 113, 126 (1877). See generally E. Freund, supra note 215, §§ 372-88, at 380-401.


"police power" too could be described as a legal fiction, but unlike the trust doctrine, the police power is a live fiction that reflects current legal analysis and social values. The extent of police power authority does not depend on the application of formalistic categories of property law, but ultimately on the precise nature of both the governmental interest and the private property expectations at odds in a particular case.

Increased awareness of the acute condition of modern resource allocation and environmental pollution problems provided the most recent trigger for police power expansion, but its rise in importance has much earlier and pervasive origins. Most importantly, expanding governmental police power is but one significant expression of the dramatic shift that occurred during this century concerning the appropriate role of government. This country was in large part founded by individuals with a narrow view of government and a firm belief that the sphere of governmental activity was distinct from and must not tread on the private realm of the individual. At the core of this private realm was the exercise of private property rights. The sanctity of these rights derived from various philosophic and economic theories, ranging from those embracing natural law or a Kantian/Hegelian view of the relation of property to individual personality and dominion, to Benthamite utilitarianism and the

Indeed, the repudiation of these fictions seriously questions the continuing vitality of the public trust doctrine because they were all so closely related. The Supreme Court derived its notion of "property affected with a public interest" from the same source in which it found the public trust doctrine—the writings of Lord Chief Justice Hale, including De Jure Maris, which is discussed supra at note 20. Compare Munn v. Illinois, 94 U.S. 113, 125-30 (1877) with Illinois Cent. R.R. v. Illinois, 146 U.S. 387, 456-58 (1892). Public trust property, moreover, was often referred to as "qualified" property. See E. Freund, supra note 215, § 404, at 423. Those cases, now overturned by the Supreme Court, see infra note 470, that characterized state power as resting on sovereign ownership of the resource, invariably relied on the same principles of Roman and French law upon which the public trust doctrine relies. Compare Geer v. Connecticut, 161 U.S. 519, 523-24 (1896), with Comment, supra note 3, at 763-64; Sax, supra note 3, at 475; Sax, supra note 10, at 185-88; Stevens, supra note 10, at 195-98. For further discussion of the doctrine’s continuing vitality, see infra text accompanying notes 469-76.

221. See infra text accompanying note 231.
222. Cf. Stewart & Sunstein, Public Programs and Private Rights, 95 HARV. L. REV. 1193, 1204 (1982). See generally J. HURST, LAW AND SOCIAL ORDER IN THE UNITED STATES 36-41 (1977) ("The focus changed from enabling organized action to injecting more public management or supervision of affairs and providing more sustained, specialized means of defining and enforcing public policy.").
223. See Philbrick, supra note 211, at 712-13.
225. See L. BECKER, PROPERTY RIGHTS 62-64 (1977); Oakes, supra note 224, at 587; Soper, On Relevance of Philosophy to Law: Reflections on Ackerman’s Private Property and the Constitution, 79 COLUM. L. REV. 44, 64 (1979); see also Smith, The Unique Nature of the Concept of Western Law, in The Western Idea of Law 35 (J. Smith & D. Weisstub eds. 1983) (in archaic law, property was manifestation or extension of personality).
226. See Oakes, supra note 224, at 587, 624; Philbrick, supra note 211, at 710-11.
227. See Philbrick, supra note 211, at 710-11.
laissez faire beliefs of Adam Smith.\textsuperscript{228} In all events, the basic function of government was quite narrow—to preserve private property by providing security from domestic crime and protection from foreign invasion.\textsuperscript{229}

The economic and wartime turmoil of the first half of the 1900’s, spurred by rapid industrialization and social urbanization, severely eroded this traditional view of government\textsuperscript{230} and in the process laid the foundation for the developments in environmental law that occurred in the last decade and a half. Antitrust law and labor law, followed by a host of ambitious New Deal programs, challenged the notion of limited government and sought to infuse new economic theories and social values into the laws.\textsuperscript{231} The sovereign authority to tax, spend, and regulate formed a powerful triad indispensable to this systematic process.\textsuperscript{232} Sovereign power to hold and dispose of its own property served only a relatively minor role in the process.

The environmental protection and natural resource conservation laws of the last fifteen years broke dramatically from the traditional view of limited government and incorporated much of the New Deal vision of the rightful role of government. At the outset, the validity of the newer laws does not, as it did in the past, turn on their furthering narrow health and safety concerns;\textsuperscript{233} courts require only a rational relation to a goal of some “conceivable public purpose,”\textsuperscript{234} including, for example, aesthetic values, conservation goals, or public welfare in general.\textsuperscript{235} Because environmental and natural resources laws do not always translate easily into

\begin{footnotesize}
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\item See \textit{id.} at 713.
\begin{quote}
The supreme power cannot take from any man any part of his property without his own consent. For the preservation of property being the end of government, and that for which men enter into society, it necessarily supposes and requires that the people should have property . . . .
\end{quote}
\textit{See also Frug, The City as a Legal Concept}, 93 \textit{Harv. L. Rev.} 1059, 1093 (1980); Oakes, \textit{supra} note 224, at 584-86; Philbrick, \textit{supra} note 211, at 713-14.
\item See Oakes, \textit{supra} note 224, at 623 (historically hands-off government evolved into New Deal intrusive government); Philbrick, \textit{supra} note 211, at 716.
\item All three types of governmental measures have played significant roles in environmental and natural resources policy. \textit{See infra} text accompanying notes 360-66. Although they are treated differently by the courts, the impact of each is essentially the same: each effectively transfers control of resource development from the private sector to the government. \textit{See A. Church, Conflicts over Resource Ownership} 7, 9 (1982).
\item See, e.g., E. Freund, \textit{supra} note 215, § 8; \textit{see also id. §§} 616-620. Even economic goals, now a common object of police power measures, previously were suspect. \textit{See id. §§} 12, 15.
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health and safety goals, especially those of an immediate nature, this substantive expansion in the police power's scope has been extremely important, at least in facilitating the adoption of the laws.

b. Erosion of Private Property

The relationship of the sovereign police power to private property has been marked by the steady erosion of private property's sanctity in the face of the sovereign police power's growth. Events in the first half of this century established certain basic legal principles necessary to this decline, most importantly, the propriety of manipulating property rules to promote evolving social goals. The full import of those principles has begun to take hold only with the developments in the environmental arena over recent years.

The clash between governmental authority and private property rights has been fought over the last century on several constitutional fronts, including the takings, due process, and contract clauses. Invariably, the tests are worded differently, but the basic issue at stake is essentially the same: the degree to which the government may interfere with privately

236. For example, commentary at the beginning of this century suggests that conservation of natural resources and protection of visual beauty might well have fallen outside the traditional health and safety confines of the police power. See, e.g., E. Freund, supra note 215, §§ 12-13, 15.

237. See generally B. Ackerman, Private Property and the Constitution 1-5 (1977) (discussing whether just compensation clause of Constitution is basically sound or whether it is ripe for change; determination turns on whether clause is viewed from a scientific policymaker's perspective or from ordinary observer's perspective); H. Berman, supra note 230, at 36-37 (Western law experiencing a break with its emphasis on private property and moving toward emphasis on state and social property).

238. See Village of Euclid v. Ambler Realty Co., 272 U.S. 365, 387 (1926): Regulations, the wisdom, necessity and validity of which, as applied to existing conditions, are so apparent that they are now uniformly sustained, a century ago, or even half a century ago, probably would have been rejected as arbitrary and oppressive. Such regulations are sustained, under the complex conditions of our day . . . . And in this there is no inconsistency, for while the meaning of constitutional guaranties never varies, the scope of their application must expand or contract to meet the new and different conditions which are constantly coming within the field of their operation. In a changing world, it is impossible that it should be otherwise.


240. The judicial due process inquiry asks whether the challenged governmental measure is rationally related to a legitimate governmental purpose. See Exxon Corp. v. Governor of Md., 437 U.S. 117, 124-25 (1978). To determine whether a taking has occurred, the
held expectations. Because the taking issue has been the most pervasive (and elusive) throughout this century, the context of that constitutional clause best highlights the shift in governmental authority.

When the legitimate scope of the police power was quite narrow and was essentially confined to restricting activities that were clearly harmful or noxious, courts had little difficulty disposing of takings or comparable constitutional challenges. The right of private individuals to exercise their property rights and so create common-law nuisances hardly appeared constitutionally sacrosanct. The relative equities implicated by the clash of public and private values became less clear, however, as the scope of legitimate governmental police regulation broadened during this century.

This shift in the equities is illustrated by the classic confrontation between Justice Holmes and Justice Brandeis in the most celebrated tak-

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241. Oakes, supra note 224, at 621. Indeed, legal academics currently are debating the proper constitutional basis for challenging governmental measures that a party believes are unduly oppressive. Some commentators believe that the due process clause and not the takings clause is the proper basis upon which to attack governmental police power regulation. See Sterk, Government Liability for Unconstitutional Land Use Regulation, 60 Ind. L.J. 113, 124 (1985); see also Stoebuck, Police Power, Takings, and Due Process, 37 Wash. & Lee L. Rev. 1057, 1058-61, 1097-99 (1980). Others attack these proposals as advocating an unwarranted and unworkable return to substantive due process. See Kelso, Substantive Due Process as a Limit on Police Power Regulatory Takings, 20 Willamette L. Rev. 1, 41-42 (1984).

242. See supra text accompanying note 233.

A prohibition simply upon the use of property for purposes that are declared, by valid legislation, to be injurious to the health, morals, or safety of the community, cannot, in any just sense, be deemed a taking or an appropriation of property for the public benefit. Such legislation does not disturb the owner in the control or use of his property for lawful purposes . . . , but is only a declaration by the State that its use by any one, for certain forbidden purposes, is prejudicial to the public interests . . . . The exercise of the police power by the destruction of property which is itself a public nuisance, or the prohibition of its use in a particular way, whereby its value becomes depreciated, is very different from taking property for public use . . . .

244. See Wickersham, The Police Power, A Product of the Rule of Reason, 27 Harv. L. Rev. 297, 315 (1914) ("[T]he pressure is very great on the part of social reformers to compel legislation which transcends constitutional restrictions, and seeks justification under the elastic boundaries of the police power.").
ings case, *Pennsylvania Coal Co. v. Mahon.* Pennsylvania Coal involved a constitutional challenge to a state law that prevented the owner of subsurface coal rights from mining coal in a manner that caused the surface estate to subside. The state legislature intended the restriction to override any prior express agreements between the surface and subsurface estate owners concerning the rights of the latter to mine even in the event of subsidence. In the majority opinion, which struck down the state law as an unconstitutional taking, Justice Holmes revealed his great concern with the expansion of governmental intrusions into the marketplace of private property. Holmes apparently questioned whether the law served any public purpose at all, and expressed his concern with the tendency of government to erode gradually private property interests in the name of the collective good or public interest. In sharp contrast, Justice Brandeis, writing for the dissent, had no difficulty accepting the appropriateness of the governmental action. In his view, the government could interfere with private agreements when those agreements substantively implicated public health and safety concerns. The parties' private contract to the contrary could not bind the legislature and impede its power to enact the law.

Although *Pennsylvania Coal* is nominally still good law, the underlying

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246. The "statute forbade the mining of anthracite coal in such way as to cause the subsidence of . . . any structure used as a human habitation . . . ." 260 U.S. at 412-13.

247. In *Pennsylvania Coal,* the Mahons' title to the surface originated in a deed from the Pennsylvania Coal Company, in which the company had retained all subsurface mineral rights and the Mahons had specifically waived any right to claims based on subsidence. See id. at 412.

248. See id. at 413-14 ("This is the case of a single private house . . . . [U]sually in ordinary private affairs the public interest does not warrant much of this kind of interference. . . . The damage is not common or public . . . . [I]t [is] clear that the statute does not disclose a public interest sufficient to warrant so extensive a destruction . . . . ").

249. See id. at 415 ("[T]he natural tendency of human nature is to extend the [police power] qualification [of private property] more and more until at last private property disappears. But that cannot be accomplished in this way under the Constitution of the United States."). Justice Holmes' ruling may have been influenced by contemporaneous writings of Roscoe Pound, who expressed analogous concerns. See Pound, The End of Law as Developed in Legal Rules and Doctrines, 27 Harv. L. Rev. 195, 225-34 (1914); infra notes 428-35 and accompanying text.

250. Compare Justice Brandeis' favorable view of the police power in *Pennsylvania Coal* with his unfavorable view of notions of heightened sovereign trust authority to reallocate water resources, as expressed in a law review article he coauthored in 1888. See Warren & Brandeis, The Wattupa Pond Cases, 2 Harv. L. Rev. 195, 211 (1888); infra note 465.

251. See 260 U.S. at 417 ("[R]estricion imposed to protect the public health, safety or morals from dangers threatened is not a taking. The restriction here in question is merely the prohibition of a noxious use.").

252. See id. at 420 ("If public safety is imperiled, surely neither grant, nor contract, can prevail against the exercise of the police power.").

253. The Court still consistently cites *Pennsylvania Coal* in its more recent takings cases.
rationale of modern takings law is more consistent with the views of the Pennsylvania Coal dissenters. While unable to develop any "settled formula" to resolve takings challenges, the current Supreme Court's ad hoc inquiry into the "justice and fairness" considerations of particular cases reflects a broad acceptance of governmental police power measures that "impair or even destroy recognized property interests." Whether the governmental restriction treats similarly situated property alike, balances the benefits and burdens of a civilized society, or promises


254. For example, recently the Court explicitly rejected the rationale, basic to Pennsylvania Coal, that a takings inquiry can focus on particular segments of the property rather than the property as a whole. In Penn Central the Court refused to focus on just the interference of a challenged historic preservation law on the full use of air rights, dismissing any contrary contention that might be based on Pennsylvania Coal. See Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 130 & n.27 (1978); see also Andrus v. Allard, 444 U.S. 51, 66 (1979) ("[T]he destruction of one 'strand' of the bundle [of property rights] is not a taking, because the aggregate must be viewed in its entirety."). Similarly, Pennsylvania Coal appears to endorse a judicial takings inquiry that focuses solely on economic impact: "[W]hile property may be regulated to a certain extent, if regulation goes too far it will be recognized as a taking." See 260 U.S. at 415. In recent decisions, however, the Court has expressly held that impact alone cannot establish an unconstitutional taking. See infra text accompanying notes 262-66. In light of all these subsequent qualifications, it is not surprising to see courts today discounting Pennsylvania Coal and upholding against takings challenges police power measures that impose restrictions remarkably similar to those at issue in Pennsylvania Coal. See, e.g., Keystone Bituminous Coal Ass'n v. DeBenedictis, 581 F. Supp. 511, 513 (W.D. Pa. 1984). But see Commonwealth v. Stearns Coal & Lumber Co., 678 S.W.2d 378, 381 (Ky. 1984) (suggesting that state wild and scenic rivers law did not effect a taking of coal miner's land only because courts prevented full execution of law), appeal dismissed, 105 S. Ct. 3549 (1985).


256. See Andrus v. Allard, 444 U.S. 51, 65 (1979); see also Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 125 (1978) ("[I]n instances in which a state tribunal reasonably concluded that 'the health, safety, morals, or general welfare' would be promoted by prohibiting particular contemplated uses of land, this Court has upheld land-use regulations that destroyed or adversely affected recognized real property interests . . . .") (quoting Nectow v. City of Cambridge, 277 U.S. 183, 188 (1928)).


258. See id. at 124. This criterion is reminiscent of the Court's scrutiny of a state tax under the commerce clause to determine whether the tax creates an impermissible burden on interstate commerce. The dispositive issue is whether the state has given anything for which it can ask return, not whether some rough equivalence exists between what the state has given and what it is asking. See Commonwealth Edison v. Montana, 453 U.S. 609, 625-29 (1981); General Motors Corp. v. Washington, 377 U.S. 436, 440-41 (1964). As the Court has stated in the context of a constitutional challenge to the amount of a tax: A tax is not an assessment of benefits. It is, as we have said, a means of distributing the burden of the cost of government. The only benefit to which the taxpayer is constitutionally entitled is that derived from his enjoyment of the privileges of living in an organized society, established and safeguarded by the devotion of taxes to public purposes.
a general "reciprocity of advantage" among private parties are prime factors for judicial consideration. Economic impact alone is insufficient to show a taking and lost profits are a "slender reed" upon which to base a takings claim.

Moreover, even though the Court considers the impact of the


259. See Pennsylvania Coal, 260 U.S. at 415. Interestingly, Justice Rehnquist, dissenting in Penn Central and relying on Holmes majority opinion in Pennsylvania Coal, apparently was willing to read into the takings clause an "exception" for "prohibition[s that] appl[y] over a broad cross section of land and thereby 'secure an average reciprocity of advantage.' " Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 147 (1978) (Rehnquist, J., dissenting) (quoting Pennsylvania Coal, 260 U.S. at 415). Ironically, had the Court adopted the view of the dissenters, which also included an exception for police power measures that forbid uses that are "dangerous to the safety, health, or welfare of others," see 438 U.S. at 145 (Rehnquist, J., dissenting), environmental regulations might have fared extremely well, even better than under the takings formulation. Justice Brennan had to adopt to uphold the historic landmark designation at issue in Penn Central. Most environmental restrictions apply to a broad cross section of natural resources and thus guarantee precisely the reciprocity Justice Rehnquist apparently endorsed. In contrast, under the takings analysis in Justice Brennan's majority opinion, the takings clause has no such exceptions, even for police power measures that prohibit noxious uses. See 438 U.S. at 133-34 n.30. Under the Penn Central majority view, it is not even clear, for instance, that an environmental protection measure prohibiting a traditional noxious use would survive a takings challenge if it "denies an owner economically viable use" of the property. See Agins v. City of Tiburon, 447 U.S. 255, 260 (1980) (emphasis added). Justice Brennan apparently based his rejection of the reciprocity criterion on his concern that it would result in the striking down of laws that burdened certain individuals more than others. In his view, "[l]egislation designed to promote the general welfare commonly burdens some more than others." See 438 U.S. at 133.


261. Andrus v. Allard, 444 U.S. 51, 66 (1979) ("Prediction of profitability is essentially a matter of reasoned speculation that courts are not especially competent to perform. Further, perhaps because of its very uncertainty, the interest in anticipated gains has traditionally been viewed as less compelling than other property-related interests."); see also Williamson County Regional Planning Comm'n v. Hamilton Bank, 105 S. Ct. 3108 n.12, 3119-20 (1985) (suggesting that "economic profitability" of development of restricted parcel "in light of previous reliance expenditures" not correct touchstone for takings analysis). But see Sax, Takings, Private Property, and Public Rights, 81 YALE L.J. 149, 151 n.7 (1971) (right to profit of highest concern in takings analysis). Consideration of economic impact and profitability is especially problematic now that government plays such a substantial function in the national economy. In myriad ways, the government takes actions that affect the relative value of private property. There is no suggestion that an unconstitutional taking has occurred when the result is a reduction in value. See Donahue, supra note 211, at 30 (inflation does not directly affect traditional property rights, privileges, or powers). Judicial appreciation of the current role of government is also reflected in recent takings cases in which the Court has considered the beneficial impacts of the governmental action together with the harmful impact in evaluating the overall economic impact. See Agins v. City of Tiburon, 447 U.S. 255, 262 (1980) ("The zoning ordinances benefit the appellants as well as the public by serving the city's interest in assuring careful and orderly development . . . . In assessing the fairness of the zoning ordinance, these benefits must be considered along with any diminution in market value that the appellants might suffer.").
challenged governmental measure on reasonable private investment-backed expectations. In *Ruckelshaus v. Monsanto Co.*, a 1984 decision, the Court announced a rule of law which, read broadly, suggests that "reasonable investment-backed expectations" cannot exist in activities that the government may declare contrary to environmental protection and resource conservation goals. In *Monsanto* the Court held that when parties engage in an area that they know is of public concern and regulated by government, they are on notice that the government may regulate in the future. Consequently, they cannot complain when their investments are adversely affected by subsequent regulations. The great public concern with private decisions that affect the quality of the natural environment and relative abundance of natural resources apparently would place most environmental legislation within the scope of *Monsanto's* generous rule of

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264. In *Monsanto* the Supreme Court asserted that the factor of "reasonable investment backed expectations" was "so overwhelming" that it did not need to consider either the character of the governmental action or its economic impact on the party claiming the unconstitutional taking. See 104 S. Ct. at 2875. The Court's opinion, however, clearly expresses that its evaluation of the "reasonableness" of the expectation depended on the character of the governmental action. Indeed, the gist of the Court's decision, that any expectations of nondisclosure were unreasonable, was based on the character of the governmental action challenged. The Court stressed that the action involved the regulation of an industry of concern to the public. See *id.* at 2876. The Court also noted that consideration of the economic impact of disclosure should not account for any drop in market value caused by disclosing that the product is harmful; only market losses due to competitive losses would be adverse impacts relevant to a takings determination. See *id.* at 2878 n.15; see also *Energy Reserves Group, Inc. v. Kansas Power & Light Co.*, 459 U.S. 400, 411 (1983) ("In determining the extent of the impairment [to reasonable contractual expectations], we are to consider whether the industry the complaining party has entered has been regulated in the past.").

265. Monsanto had submitted information to the federal government under three separate statutory programs because FIFRA was substantially amended in both 1972 and 1978. The Court, therefore, separately considered the reasonableness of Monsanto’s expectations for each of those three periods. Prior to 1972, the federal law had been primarily just a labeling and licensing statute. See Federal Insecticide, Fungicide, and Rodenticide Act, ch. 125, 61 Stat. 183 (1947). It generally prohibited the disclosure of product formulae, but did not state whether disclosure of health and safety data submitted with a license application would occur. See *id.* §§ 3(c)(4), 8(c), 61 Stat. 163, 167, 170. Between 1972 and 1978, the statute regulated the pesticide industry much more closely, but explicitly prohibited the EPA from disclosing trade secrets and other commercial and financial information. See Federal Environmental Pesticide Control Act of 1972, Pub. L. No. 92-516, § 10(b), 86 Stat. 973, 989. After 1978, the law allowed EPA disclosure under certain circumstances, such as the agency's belief that disclosure was necessary to protect
constructive notice. As a result, private property owners adversely affected by the legislation may find little constitutional protection, at least under the takings clause.

In all events, this most recent opinion highlights how the Court's current threshold acceptance of the legitimacy of pervasive governmental regulation undermines expectations in private property rights. In particular, Monsanto strongly questions judicial assertions that state law can define the extent of private property rights and that federal law cannot preempt those rights. The clear thrust of the Monsanto opinion is that the takings protection extends only to affected private expectations that are reasonable, which in turn depends largely on the substance of federal law.

c. Significance of the Public Trust Doctrine

With the emergence of this modern police power, the public trust doctrine retains little importance in promoting governmental authority to protect and maintain a healthy and bountiful natural environment. The substantive embrace of legitimate governmental police power goals is no longer narrow; indeed, it is broader and more flexible than the embrace of the trust doctrine both in terms of permissible ends and the natural resources to which it applies. The doctrine similarly adds little to the

against unreasonable risk of injury to health or the environment. See 7 U.S.C. §§ 136a, 136h (1982).

For all three periods, the Court based its determination of the reasonableness of Monsanto's expectations on the statutory provisions. Thus, because after 1978 the statute clearly stated that disclosure would occur in certain circumstances, Monsanto could have no reasonable expectation that it would not. 104 S. Ct. at 2875. Similarly, because the statute had made certain guarantees of nondisclosure between 1972 and 1978, the government could not later claim that Monsanto's expectation of confidentiality based on those guarantees was unreasonable with respect to the information Monsanto turned over in that interim period. Id. at 2877-78. The most significant aspect of the Court's opinion is its treatment of the pre-1972 period. The Court held that any expectations Monsanto might have had, based on nondisclosure, were unreasonable, although the government had not indicated in the statute that disclosure would be necessary. According to the majority, the pesticide "industry [had] long [been] the focus of great public concern and significant governmental regulation. [Consequently,] the possibility was substantial that the Federal Government . . . would find disclosure to be in the public interest." See id. at 2876.

266. See generally Sax, supra note 235, at 494 ("We are already so far along in diminishing developmental rights that owners are viewed, in important respects, as already on notice.").


268. See 104 S. Ct. at 2878 ("If Congress can 'pre-empt' state property law . . . , then the Taking Clause has lost all vitality.").

269. The public trust doctrine historically applies only to a few natural resources and areas of public importance, such as city streets. See supra text accompanying notes 21-55. Only recently has the doctrine expanded beyond those traditional concerns. See supra text accompanying notes 85-128. Because of its historical ties, the doctrine is necessarily less flexible than the police power, the mandate of which is purely substantive: the promotion of the public health, safety, morals, and welfare. Professor Sax and other promoters of
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degree of governmental immunity from takings challenges to governmental environmental protection and conservation measures. It is generally unnecessary to argue against the challenges on grounds that preexisting sovereign rights survived conveyance of the affected property into private hands or that the government implicitly has reserved certain legal interests. Indeed, entering this sort of legal discourse is risky because then the validity of important governmental measures ultimately depends on judicial acceptance of arguments based on antiquated legal fictions that misfocus the judicial inquiry.²⁷⁰ The Supreme Court has made it quite clear in the context of various constitutional challenges to governmental actions based on trust notions of resource ownership, including the takings clause, that these fictional ownership claims do not change the nature of the Court’s constitutional analysis.²⁷¹

Moreover, the public trust tactic is not only risky, it is unnecessary in this regard. Police power authority is well settled and requires no comparable judicial discovery of prior sovereign reservation.²⁷² The government may, pursuant to its police powers, change the rules of the game at a later time.²⁷³ The Supreme Court’s Monsanto opinion assumes just such continuing regulatory authority.²⁷⁴ To be sure, the Court’s analysis of takings challenges to police power measures is far from clear. Still, at least that analysis depends on candid consideration of relevant competing concerns and when applied in recent decisions, the analysis suggests that the courts appreciate the special need for strict, yet evolving, natural resource and environmental protection laws. Since its inception, the public trust doctrine has been premised on the notion that absent title or reserved trust authority, the government would not possess the necessary regulatory

the doctrine acknowledge this essential weakness. See Coquillette, supra note 10, at 816-17; Sax, supra note 10, at 185-86; see also infra text accompanying notes 452-60.

²⁷⁰. The risks inherent in attempting to achieve important policy objectives through a legal fiction such as the public trust doctrine is discussed infra text accompanying notes 368-476.

²⁷¹. See infra text accompanying notes 469-75.

²⁷². A primary feature of the public trust doctrine is that the limited original sovereign grant provides the government with continuing authority over the resource. For example, in National Audubon Soc’y v. Superior Court, 33 Cal. 3d 419, 437-40, 658 P.2d 709, 721-23, 189 Cal. Rptr. 346, 358-60, cert. denied, 464 U.S. 977 (1983), the California Supreme Court relied on this aspect of the public trust doctrine to support its decision that the water rights Los Angeles had obtained to the feeder streams were not absolute, but were subject to continuing regulation and restriction. To a large extent, the court could have achieved the same result without resorting to the public trust doctrine, simply by relying on existing statutory provisions and the police power authority. See Walston, The Public Trust Doctrine in the Water Rights Context: The Wrong Environmental Remedy, 22 SANTA CLARA L. REV. 63, 82 (1982).

²⁷³. See generally E. FREUND, supra note 215, § 24, at 20.

²⁷⁴. An even more recent decision by the Court, also rejecting a takings challenge to a federal regulatory scheme, rests on a similar rationale. See United States v. Locke, 105 S. Ct. 1785, 1798 (1985) ("Claimants . . . take their mineral interests with the knowledge that the Government retains substantial regulatory power over those interests.").
authority to protect important natural resources. This original premise clearly is no longer valid.

This potential for governmental authority absent sovereign ownership or trusteeship interest is not merely academic, but is in large part being realized in environmental and natural resources law. At the federal level, the government has established complex permit schemes that restrict the allowable impact of traditional private property rights on the quality and quantity of essential natural resources, such as air, minerals, certain animal species, surface and subsurface water supplies, and in turn on public health and welfare. The federal Clean Air Act, for example, has effectively "zoned" the country into areas of different levels of air quality and regulated the operation of sources of air pollution, ranging from industrial plants to private automobiles, in those zones.

The practical effect of these laws is to superimpose onto the existing scheme of private property obtained in the private marketplace a new set of property rights, the distribution of which the federal government controls. These new rights are often indispensable to meaningful exercise of prior traditional property rights. For example, the Clean Water Act eliminates the right of any person to discharge any substance into waters

275. See, e.g., Illinois Cent. R.R. v. Illinois, 146 U.S. 387, 453 (1892) ("The control of the State for the purposes of the trust can never be lost . . . ."); id. at 454 ("[L]ands under navigable waterways . . . cannot be placed entirely beyond the direction and control of the State."); id. at 455 ("Any grant of this kind is necessarily revocable . . . . The ownership of the navigable waters of the harbor and of the lands under them is a subject of public concern to the whole people of the State. The trust . . . is governmental and cannot be alienated . . . .")

276. The Illinois Central Court apparently regarded the police power, which it agreed was inalienable just as the trust, see Illinois Cent. R.R. v. Illinois, 146 U.S. 387, 453 (1892), as involving only matters such as the "administration of government and the preservation of the peace." See id. In contrast, those dissenting from the opinion argued that the majority had jumped the gun in claiming that the state was powerless to protect public rights in the resource. See id. at 474 (Shiras, J., dissenting) ("To prevent misapprehension, it may be well to say that it is not pretended in this view of the case that the State can part, or has parted, by contract, with her sovereign powers.").


278. See 42 U.S.C. §§ 7410, 7470-7479 (1982) (prevention of significant deterioration); id. § 7491 (visibility protection); id. §§ 7501-7508 (nonattainment areas).

279. See id. § 7411 (new source performance standards); id. §§ 7521-7551 (motor vehicle emission standards).
of the United States, regardless of impact on water quality, without a permit from the government. The undeniable import of this restriction, like similar restrictions in the Clean Air Act and Safe Drinking Water Act, is to provide the government with the power to grant, in the first instance, the essential right to discharge substance. Other statutory restrictions cover a host of private activities, including the use of privately owned oil and natural gas to supply energy, the taking of certain animal species or the destruction of their habitat, the creation, transportation, use, and disposal of toxic substances and hazardous wastes.

The proliferation of these laws is not confined to the federal government, but extends to state and local governments. Analogues to the federal laws generally exist and in addition, a host of state and local laws regulate private use of natural resources traditionally held more in the domain of those governments. The most familiar of these resources is land—the Court has referred to local zoning as the “classic example” of valid police power regulation. Even with land, however, the nature and depth of governmental regulation of use is increasingly bold. Land use regulations

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280. See 33 U.S.C. §§ 1311(a), 1362(5), 1362(12), 1362(14), 1362(16), 1362(19) (1982). Notably, it is neither just water quality that is increasingly under federal control nor always the executive branch that formulates these new “federal property rights.” In the guise of equitable apportionment decrees, the United States Supreme Court has found itself in the business of assigning rights to interstate waters, based on the Court’s own notions of fairness and efficiency. The Court has held squarely that its decree is not predetermined by preexisting state property laws that provide private rights in the aquatic resource. See, e.g., Colorado v. New Mexico, 459 U.S. 176, 183-88 (1982); see also Wiel, Natural Communism, 47 HARV. L. REV. 425, 438 (1934). The Court, moreover, has even invited congressional oversight of groundwater overdraft, describing it as a “national” problem. See Sprague v. Nebraska ex rel. Douglas, 458 U.S. 941, 954 (1982).


282. See 42 U.S.C. §§ 300f to 300i-10 (1982).


are no longer confined to general designations of residential, industrial, and business zones as in the past, but now extend much further into the realm of private decisionmaking. Community aesthetics, historical preservation, energy conservation, architectural norms, and open space values all are enforced through land use restrictions.

Consequently, regulators increasingly view land itself as a fragile resource, the ecological value of which can be destroyed and the preservation of which is important to both the public at large and ultimately to future generations. This perception is in large part responsible for the recent proliferation of laws restricting the conversion or destruction of farmlands and protecting wetlands and estuaries. Soil loss


292. See Village of Belle Terre v. Boraas, 416 U.S. 1, 9 (1974) (zoning power can legitimately be used to create a “quiet place where yards are wide, people few, . . . and the blessings of quiet seclusion and clear air make the area a sanctuary for people”). See generally Developments, supra note 291, at 1447-57.

293. See Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 129 (1979) (“[P]reserving structures and areas with special historic, architectural, or cultural significance is an entirely permissible governmental goal . . . .”).


restrictions\textsuperscript{300} and bans on corporate farming,\textsuperscript{301} the latter partly based on the belief of poor corporate stewardship of long-term productivity,\textsuperscript{302} reflect the same general public concern. The upshot is that now even for land, undoubtedly the most central object of private property rights, the legitimate scope of private expectations has been significantly cut back pursuant to state and local police power measures.\textsuperscript{303}

2. Modern Administrative Law

The tremendous expansion in the nature of sovereign authority and the degree of governmental oversight does more, however, than undercut any meaningful role for the public trust doctrine in promoting governmental authority. The implications of this expansion question the central premise of the trust doctrine's origins—that the doctrine provides a needed legal basis to ensure public accountability for governmental decisions that adversely affect the environment.

Here again, hindsight suggests that the modern public trust thesis is wide of the mark. First, it did not account for developments in ad-


\textsuperscript{301} For a survey of state laws restricting corporate ownership of farmland, see J. Juergensmeyer \& J. Wadley, supra note 298, at 146-51.

\textsuperscript{302} Absentee Ownership of Farmland: Hearing Before the House Subcomm. on Family Farms, Rural Development, and Special Studies of the Comm. on Agriculture, 96th Cong., 2d Sess. 20-21 (1980) (testimony of Jim Wolf, Neb. Sandhills Resources, Inc.); id. at 32 (testimony of Jo Anne Neuzil, Agri Research and Information Services, Inc.).

\textsuperscript{303} Commentators argue that a constitutional right to develop land in the United States no longer exists or should no longer exist. See, e.g., Caldwell, \textit{Rights of Ownership or Rights of Use?—The Need for a New Conceptual Basis for Land Use Policy}, 15 Wm. \& Mary L. Rev. 759, 769-73 (1974); Comment, \textit{Regulation of Land Use: From Magna Carta to a Just Formulation}, 23 UCLA L. Rev. 904, 905 (1976). Recent judicial decisions upholding state statutes that regulate landowners' rights to use their property certainly support that conclusion. See, e.g., Graham v. Estuary Properties, Inc., 399 So. 2d 1374, 1382 (Fla.), cert. denied, 454 U.S. 1083 (1981); Turnpike Realty Co. v. Town of Dedham, 362 Mass. 221, 232-35, 284 N.E.2d 891, 898-900 (1972), cert. denied, 409 U.S. 1108 (1973); Just v. Marinette County, 56 Wis. 2d 7, 22, 26, 201 N.W.2d 761, 770-72 (1972); cf. Prah v. Maretti, 108 Wis. 2d 223, 237, 321 N.W.2d 182, 190 (1982). But see Silva v. Ada Township, 416 Mich. 153, 160-61, 330 N.W.2d 663, 666 (1982) (preventing natural resource extraction from land invalid absent extremely serious consequences from proposed extraction). Indeed, many landowners today perceive that they benefit from restrictions on development. Bosselman, supra note 297, at 682-83; see supra note 261. It has long been settled in other countries that private property owners do not possess a right to develop their land. See Lefcoe, \textit{The Right to Develop Land: The German and Dutch Experience}, 56 Ore. L. Rev. 31, 32-36, 41 (1977); Roberts, \textit{Land Storage—The Swedish Example}, 38 Mont. L. Rev. 121, 123-24 (1975); Sax, supra note 238, at 324. Of course, traditional notions of private ownership of land are not the only interests currently being undermined. Water rights, especially groundwater rights in the West, increasingly are coming under strict state regulation. Rights once considered absolute under traditional common-law principles are fast becoming revocable gratuities controlled by the government. See infra text accompanying notes 402-12.
ministrative law brewing back in 1970,\textsuperscript{304} in particular, the impact of environmental values on administrative law. Second, it missed the fundamental shift that occurred after infusing environmental values into the government’s role in enforcing environmental protection programs.

\textit{a. Administrative Agency Decisionmaking and Accountability}

Prior to and during the 1970’s, administrative law underwent a significant reformation\textsuperscript{305} that obviated any meaningful role for the public trust doctrine. Administrative law responded to changing societal demands without resort to the doctrine’s origins in Roman law public trust principles. As the subject matter of the administrative agencies’ decisions steadily expanded beyond the traditional scope of purely “administrative” matters to substantive issues that affect the behavior of persons in all aspects of their social and economic lives, the basic methodology of administrative agency lawmaking fundamentally changed.\textsuperscript{306} At the most abstract level, administrative law relatively abandoned the traditional mode of incremental agency decisionmaking, exemplified by case-by-case adjudication,\textsuperscript{307} and a new synoptic model of administrative lawmaking emerged, which the commentators dubbed “comprehensive rationality.”\textsuperscript{308}

\textsuperscript{304} The discussion below is directed primarily to federal, not state, administrative law. Admittedly, this has several drawbacks. First, clearly state administrative law is more relevant to the public trust doctrine. Second, developments in the state arena are not identical to those in the federal domain and undoubtedly state reforms have generally not been as extensive as federal reforms. In addition, certain concerns about administrative agency decisionmaking are likely to be greater at the state level: for example, risk of agency capture and problems associated with scarce agency resources are more serious at the state level. Still, the general focus on federal administrative law here is not only necessarily expedient, but highly pertinent. Although perhaps not as extensive as federal law, state administrative law has undergone a reformation over the last fifteen years that has in large part paralleled that occurring in federal administrative law. In all events, the potential for state administrative law advances certainly exists, which, by itself, bears on the viability of and independent need for the public trust doctrine. For a general discussion of state versus federal administrative law, see Bonfield, \textit{State Law in the Teaching of Administrative Law: A Critical Analysis of the Status Quo}, 61 TEX. L. REV. 95, 103, 110-13, 123, 127-31 (1982); Bonfield, \textit{Rule Making Under the 1981 Model State Administrative Procedure Act: An Opportunity Well Used}, 33 AD. L. REV. 77 (1983). But see 1 K. Davis, \textit{Administrative Law Treatise} 36-37 (2d ed. 1978) (state judges lag far behind federal judges in developing administrative law, and both state and federal judges look to federal administrative law when confronted with difficult problems).


\textsuperscript{306} See Diver, \textit{supra} note 305, at 401-21; Stewart, \textit{supra} note 305. at 1676-88.

\textsuperscript{307} See Diver, \textit{supra} note 305, at 399-402.

\textsuperscript{308} See \textit{id.} at 396-99; see also Chemical Mfrs. Ass’n v. Natural Resources Defense Council, 105 S. Ct. 1102, 1126-28 (1985) (Marshall, J., dissenting) (disagreeing that EPA can allow exceptions to Clean Water Act standards). The synoptic model, epitomized by generic rulemaking, possesses four typical characteristics: (1) articulation of specific goals to be
Congress, courts, and the Chief Executive each have encouraged and responded to this shift toward administrative lawmaking by the headless fourth branch\textsuperscript{309} in ways designed to ensure a more complete record before the decisionmaker and to increase agency accountability to the public.\textsuperscript{310} Greater agency accountability itself, to be sure, leads to a more complete administrative record because it facilitates the airing of competing views before the agency,\textsuperscript{311} but it also serves an important independent function. Specifically, as the subject matter of agency lawmaking becomes broader and more substantive, concern necessarily grows about the purity of the process through which the agencies make their ultimate determinations.\textsuperscript{312} At the same time, however, statutorily prescribed agency procedures for rendering generic\textsuperscript{313} rather than adjudicatory rules routinely provide for less, not more, rigorous public and judicial scrutiny.\textsuperscript{314} The original procedures were written with the traditional model of agency lawmaking in mind, that is, agencies decided all important substantive

\begin{itemize}
  \item attained;
  \item identification of alternate methods of attainment;
  \item evaluation of the effectiveness of each alternative; and
  \item selection of the optimal alternative.
\end{itemize}

See Diver, supra note 305, at 396.

During the 1970's, agencies increasingly implemented decisions through generic rulemaking proceedings instead of through case-by-case adjudications. For example, the Nuclear Regulatory Commission conducts individual adjudicatory proceedings on applications to construct or operate a nuclear power plant. See Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, 435 U.S. 519, 526-27 (1978). In recent years, however, the Commission has removed certain sensitive environmental issues common to all licensing proceedings, such as the environmental impact of the nuclear fuel cycle, and addressed the issue through a generic informal rulemaking proceeding. See id. at 528-30. The rule the agency promulgates after notice and comment is applied in each of the individual adjudicatory proceedings. There is no opportunity in the formal setting to question the substance of the rule. The result is to remove from the adjudicatory setting extremely sensitive questions of environmental impact. See Baltimore Gas & Elec. Co. v. Natural Resources Defense Council, 462 U.S. 87, 100-01 (1983); Vermont Yankee, 435 U.S. at 538-39. See generally Wright, The Courts and The Rulemaking Process: The Limits of Judicial Review, 59 Cornell L. Rev. 375 (1974).


\textsuperscript{310}. Diver, supra note 305, at 409-21.


\textsuperscript{312}. See Diver, supra note 305, at 408-09; Stewart, supra note 305, at 1681-88. According to Professor Stewart, not only the widening scope of substantive agency regulation triggered closer judicial scrutiny; a growing judicial perception that the agencies were not adequately carrying out their legislative mandates to protect certain social interests also led to more expansive regulation. Stewart, supra note 305, at 1682. In particular, there was the concern that agencies are eventually "captured" by the private sector entities whose behavior the agencies regulate. See id. at 1685-86.

\textsuperscript{313}. See infra note 308 and accompanying text.

issues at the adjudicatory or otherwise incremental level. 315 Many judicial opinions, legislative enactments, and executive orders over the last decade and a half reflect this concern for more rigorous public and judicial scrutiny and generally aim to increase agency accountability in informal agency decisionmaking that involves matters of particular societal importance.

Congress passed statutes that, although still containing vague mandates, took strides to dictate procedures the agency should follow in implementing the statute. Or, Congress increasingly laid out those explicit substantive matters that the agency must consider and weigh when formulating its policy. 316 The President, similarly, in recent years has exercised his executive authority to prescribe promulgation rules for agency rulemaking procedures. 317 The courts, however, have taken the most far-reaching strides to increase agency accountability, both in response to legislative and presidential directives and at the court’s own initiative.

Courts have responded in two principal ways. First, judges have strictly enforced requirements designed to promote and enhance public participation in the agency decisionmaking process, 318 and have made it easier for a private citizen to seek judicial review of the agency’s decision. 319 At the same time, courts perceptively tightened their own stan-

315. See Diver, supra note 305, at 405; cf. Chayes, supra note 305, at 1285 (traditional concept of adjudication reflecting assumption that major social and economic arrangements resulted from activities of autonomous individuals).


318. See Diver, supra note 305, at 409-21; Fuchs, supra note 314, at 108-11. See generally Stewart, supra note 305, at 1711-60 (expansion of traditional model, extension of hearing rights, and expansion of standing).

319. The courts have relaxed traditional principles of ripeness and standing and the courts have narrowed notions that prosecutorial discretion or other matters committed to agency discretion by law are unreviewable. Both make it easier for litigants to obtain judicial review of the agency action. See Scott, Standing in the Supreme Court—A Functional Analysis, 86 Harv. L. Rev. 645, 648-58 (1973); Stewart, supra note 305, at 1723-56. For
standards of judicial review of the merits of agency decisions by requiring adequate consideration of all interests affected by the agency decision. The courts deferred to agency expertise, perceiving that agency decisions turned as much on questions of social policy and politics as on matters of technical expertise, and more willingly demanded, as a matter of agency rulemaking procedure, that an agency provide a more fully reasoned and articulated basis for its decision. In particular, judges compelled agencies to prepare more complete administrative records of decisions, explain publicly the underlying factual bases of their decisions, respond to all significant comments raised by members of the public, consider explicitly all factors relevant to their determinations, and refrain from ex parte communications with interested parties. The frequent result of these heightened procedural requirements is a record the sheer detail of which cannot help but invite even closer judicial scrutiny. Moreover, this heightened judicial scrutiny has not been confined to challenges to agency action, but increasingly extends to challenges of agency inaction as well.

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b. Impact of Environmental Values on the Administrative Process

Judicial appreciation of society's increased concern with environmental protection and resource conservation was a primary impetus behind the administrative law developments during the 1970's.\(^{329}\) Beginning with the Supreme Court's decision in *Citizens to Preserve Overton Park, Inc. v. Volpe*,\(^{330}\) courts took a "hard look" at agency decisions that implicated environmental concerns.\(^{331}\) Although the hard look doctrine may in part simply reflect the judiciary's general concern with agencies implementing vague congressional mandates involving issues of broad societal importance,\(^{332}\) such as those invariably contained in environmental laws,\(^{333}\) other more peculiar aspects of environmental concerns have been a major factor. Four aspects stand out most prominently as triggering judicial concern:\(^{334}\)

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\(^{329}\) See generally W. Rodgers, *supra* note 198, § 1.5, at 16-23. Referring to the "dis-integration" of administrative law, Professor Elliott has recently argued that the field of administrative law may not exist apart from certain subspecialties, such as environmental law. See Elliott, *The Dis-Integration of Administrative Law: A Comment on Shapiro*, 92 YALE L.J. 1523, 1528-29 (1983).


\(^{332}\) 401 U.S. 402 (1971).

\(^{333}\) See, e.g., Toxic Substances Control Act, 15 U.S.C. § 2603(a)(1)(A)(i) (1982) (Administrator can require testing if chemical substance presents "unreasonable risk of injury to health or the environment"); Endangered Species Act of 1973, 16 U.S.C. § 1533(d) (1982) ("[T]he Secretary of the Interior shall issue such regulations as he deems necessary and advisable to provide for the conservation of [threatened] species . . . ."); Clean Air Act, 42 U.S.C. § 7409(b)(1) (defining "national primary ambient air quality standards" as those standards "the attainment and maintenance of which in the judgment of the Administrator . . . are requisite to protect the public health"); Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601(24) (1982) (defining remedy with respect to cleanup of abandoned hazardous waste site as "those actions . . . taken . . . to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment").

of a ready powerful constituency able to represent the interests in environ­
mental protection, especially the interests of future generations; (2) the inherent difficulty of measuring the value of environmental protec­tion, let alone assessing the risk of a low probability-high consequence environmental catastrophe, especially when compared to the more immediate and perceptible economic rewards of resource exploitation; (3) the relationship of environmental protection to human health; and, perhaps most importantly, (4) increasing awareness that modern technology has raised the stakes of incorrect short-term decisions by giving us the power to destroy irreversibly aspects of our natural environment whose importance we are only beginning to understand.

These same basic concerns are also reflected in modern environmental and natural resources statutes, which now typically rein in agency actions that potentially affect the environment. The National Envir­

335. Stewart & Sunstein, supra note 222, at 1276; Stewart, Paradoxes of Liberty, supra note 334, at 478.
338. See Ethyl Corp. v. EPA, 541 F.2d 1, 24 (D.C. Cir. 1976) (en banc) (“special judicial interest in favor of protection of the health and welfare of people, even in areas where certainty does not exist”); see also Center for Science v. Treasury, 573 F. Supp. 1168, 1173 (D.D.C. 1983) (when health at issue, close scrutiny appropriate).
340. See Diver, supra note 305, at 413, 415-17, 419 & n.144.
tal Policy Act of 1969 (NEPA),\textsuperscript{341} buttressed by the ambitious regulations of the President's Council on Environmental Quality,\textsuperscript{342} is the most obvious example of the modern statutes. It requires federal agencies to consider the environmental impacts of proposed actions, which include issuing federal permits, spending federal funds, and managing vast federal properties, prior to taking any such action.\textsuperscript{343} So too, the inclusion in many federal environmental laws of provisions that specify those actions that the agency must consider unlawful\textsuperscript{344} and that generally impose mandatory duties on the agencies,\textsuperscript{345} coupled with citizen suit provisions empowering private suits both against agencies for failing to take required action\textsuperscript{346} and against other private parties for violating the terms of the statute,\textsuperscript{347} also has dramatically increased agency accountability to the public.

These same triggers are, to be sure, comparable to those Professor Sax suggested to justify heightened judicial scrutiny in the context of the public trust doctrine.\textsuperscript{348} But while developments in administrative law in

\begin{footnotes}
\item[345] See, e.g., Clean Water Act, 33 U.S.C. §§ 1311(b), 1314(b) (1982); Solid Waste Disposal Act, 42 U.S.C. §§ 6921-6926 (1982); Clean Air Act, 42 U.S.C. §§ 7409(a), 7410(a)(2) (1982). The Hazardous and Solid Waste Amendments of 1984, the most recent in a series of comprehensive revisions of federal environmental laws, follows the statutory pattern of strict agency duties, but with the added measure that should the agency not act within the prescribed deadline, harsh statutory prohibitions on private sector activity go into effect. See Pub. L. No. 98-616, § 201, 98 Stat. 3221, 3226 (amending section 3004 of the Solid Waste Disposal Act, 42 U.S.C. § 6924 (Supp. 1985)).
\item[348] See supra text accompanying notes 63-74.
\end{footnotes}
the environmental context confirm Sax' rationale for heightened judicial scrutiny, the developments simultaneously undercut any need to rely on trust doctrine notions. Most simply put, those special considerations related to environmental concerns have successfully spoken for themselves in the judicial arena. Thus, in Overton Park the Supreme Court, without any need for recourse to the public trust doctrine, effectively accomplished the doctrine's objective—heightened judicial scrutiny of an administrative action that failed to consider adverse environmental impacts. Indeed, the import of the Court's reasoning practically endorsed the substantive importance of the relevant environmental considerations.

The advantages of not relying on the trust doctrine, moreover, are substantial. Most fundamentally, the excess baggage that must necessarily be carried by any litigant who wishes to make an argument based on the public trust doctrine disappears. It is unnecessary to argue at the threshold that the doctrine attaches to the resource in question. Following through attenuated chains of title to show that the trust has somehow survived is unnecessary. Similarly, it is unnecessary to work around the traditional trust purposes of pro developmental objectives such as promotion of commerce (which arguably was met by the roads at issue in Overton Park).

350. See id. at 410-14; see also Scenic Hudson Preservation Conference v. Federal Power Comm'n, 354 F.2d 608, 620 (2d Cir. 1965).
351. See 401 U.S. at 412-13: [T]he very existence of the statutes indicates that protection of parkland was to be given paramount importance. The few green havens that are public parks were not to be lost unless there were truly unusual factors present in a particular case or the cost or community disruption resulting from alternative routes reached extraordinary magnitudes. If the statutes are to have any meaning, the Secretary [of Transportation] cannot approve the destruction of parkland unless he finds that alternative routes present unique problems. See Diver, supra note 305, at 414 (“The Supreme Court imposed upon the ambivalent statutory language an interpretation designed to resolve the conflict by elevating the preservation objective to nearly absolute preference.”); Stewart, Regulation in the Liberal State: The Role of Non-Commodity Values, 92 YALE L.J. 1537, 1586 (1983) (characterizing hard look doctrine as “administrative law variants on the public trust doctrine”).
352. This was precisely the mistake that the State of California made in Summa Corp. v. California ex rel. State Lands Comm'n, 104 S. Ct. 1751 (1984). In that case the state premised its ability to restrict the development and provide public access to a navigable waterbody on a prior sovereign reservation of a public trust easement in the property. See id. at 1753 & n.1. In particular the state, relying on the trust doctrine, was forced to argue that Mexico had reserved the trust interest when it conveyed to private hands the property ceded to the United States under the Treaty of Guadalupe Hidalgo in 1848, 9 Stat. 922 (1848). That property was turned over to California under the equal footing doctrine upon the state's admission to the Union in 1850. See 104 S. Ct. at 1753 & n.1. The California Supreme Court ruled for the state, but the United States Supreme Court rejected the state's tortured argument because it could find no evidence of any prior reservation. See id. at 1758. It would have been far preferable had California not based its ability to protect and maintain the integrity of the navigable waterbody on such tenuous grounds. See infra text accompanying notes 469-76.
353. As we have seen, the traditional trust doctrine concern with promoting commerce
Although administrative law has developed significantly since Overton Park, it has not re-created a need to resurrect the trust doctrine. On balance, the general thrust of the hard look doctrine clearly has not been abandoned, even by the Supreme Court, and the types of considerations raised in environmental cases will necessarily remain those that will trigger special judicial concern. The legal requirements are now in place to ensure that end.

Finally, to the extent that earlier trends have been somewhat curtailed, curtailment is not necessarily unjustified. Legitimate competing considerations, such as the need to conserve scarce agency resources, occasionally call for less judicial oversight. So too, the nature of today’s environmental issues are often so exceedingly complex that the judicial role must necessarily be limited and reliance on administrative agencies must be great. For this reason, the public trust notion of a legislative remand makes little sense today. The administrative agencies serve an essential function in this area of the law and their work should not be undercut lightly.

In all, the public trust doctrine does not further the needed balancing of modern administrative law concerns. Rather, the doctrine is rooted in the type of common-law notion, the ancient reservation of a trust interest, that modern administrative law was designed to displace. The doctrine, therefore, is not only unnecessary in light of ongoing developments, but as before, it is theoretically inconsistent with the pattern of the new legal fabric emerging.

3. The Government’s Role in Protecting the Environment and Conserving Resources

Finally, the public trust thesis loses vitality because it was based on a characterization of the relationship of the government to the natural

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has frequently been invoked to harness the doctrine’s weight in support of developmental activities. See supra text accompanying notes 48-55, 120-28.


356. See Diver, supra note 305, at 431-34.

357. See id. at 428-31; see also Stewart & Sunstein, supra note 222, at 1270.


359. See Stewart & Sunstein, supra note 222, at 1273-74.
environment that bears little resemblance to the role of government today. The public trust thesis was based on a view of government in which administrative agencies played little or no positive role in environmental protection or conservation. Those agencies instead mostly promoted developmental activities. The agencies conveyed fee simple title in public resources to private developers with few restrictions and engaged in environmentally destructive activities, building unnecessary highways and water projects, with no regard for the environmental consequences. Accordingly, the task for the law, and the public trust doctrine in particular, was to rein in the government.

Now, however, the government for decades has maintained ownership of vast expanses of invaluable parks and wilderness areas. It is a government with substantial administrative agencies, such as the Environmental Protection Agency (EPA), the Fish and Wildlife Service, and the National Oceanic and Atmospheric Service, whose primary mandates are to prevent needless environmental degradation and to maintain a healthy environment. Widely publicized efforts in recent years to undermine those mandates from within have simply not succeeded. Environmental values are now settled in society and cannot be so easily reversed. Even more fundamentally, those agencies now possess career staffs whose technical expertise in environmental matters inevitably surfaces in policy formulation. Although not always controlling the direction of agency decisions, agency staffers have proved quite able to resist the momentum of extreme political tides in either direction. The impact of settled agency expertise is especially significant because under several laws other agencies must consult agencies that possess special environmental expertise, before the other agencies take any action that may adversely affect the environment. This often results in a record of decision that restricts the ability of political appointees to disregard environmental concerns.

360. See Sax, supra note 3, at 474.
361. Professor Sax has criticized federal maintenance of the park system, see generally Sax, Helpless Giants: The National Parks and the Regulation of Private Lands, 75 MICH. L. REV. 239 (1976), while others believe that the reforms he thought necessary were already occurring, see G. Coggins & C. Wilkinson, Federal Public Land and Resources Law 756 (1980).
362. The inability of the public trust thesis to come to terms with the new emerging federal environmental agencies was an early focal point of criticism of Professor Sax’s promotion of the doctrine. See Tarlock, Book Review, 47 IND. L.J. 406, 412-13 (1972) (reviewing J. Sax, Defending the Environment: A Strategy for Citizen Action (1971)).
364. For example, undoubtedly one of NEPA’s most significant long-term impacts has been the hiring by agencies of personnel with expertise in the environmental area and,
To be sure, the government is not immune from challenges that it continues to engage in or permit environmentally destructive activities that should be halted. The basic assumption that the government possesses no meaningful check on itself, however, is no longer valid. The laissez faire prodevelopment government upon which the public trust doctrine is premised is an apparition of the past. When Sax wrote his public trust doctrine manuscript, for instance, essentially none of the major federal environmental laws or their state analogues were on the books. The EPA did not even exist then. Today, the government’s task is primarily to translate environmental protection and natural resource conservation goals into specific legal rules and standards. Implementing these laws has been a cumbersome, complex task with few easy answers and a task marked by constant squabbles between interested agencies at both the state and

consequently, personnel usually sensitive to environmental concerns. See S. Taylor, Making Bureaucracies Think: The Environmental Impact Statement Strategy of Administrative Reform 80-82 (1984); Magat & Schroeder, Administrative Process Reform in a Discretionary Age: The Rule of Social Consequences, 1984 Duke L.J. 501, 320-21. NEPA has, in this manner, led to a new process of environmental decisionmaking in the government. See generally Envtl. Law Inst., NEPA in Action, Environmental Offices in Nineteen Federal Agencies (Oct. 1981). Professor Sax, who has criticized NEPA, see generally Sax, The (Unhappy) Truth About NEPA, 26 Okla. L. Rev. 239 (1973), does not sufficiently account for this factor. Instead he apparently perceives a model of governmental decision-making in which only outside consultants are hired to prepare environmental impact statements and governmental employees have no interest in the result and mechanically support the regulated community. See id. at 246-47; id. at 239 ("I cannot imagine a more dubious example of wishful thinking. I know of no solid evidence to support the belief that requiring articulation, detailed findings or reasoned opinions enhances the integrity or propriety of the administrative decisions."). Not only do agencies now often have personnel primarily concerned with environmental impacts, but under the Council on Environmental Quality NEPA regulations the lead federal agency must consult with any federal agency that has expertise in environmental matters. See Circulation of the Environment Impact Statement, 40 C.F.R. § 1502.19(a) (1985); Inviting Comments, 40 C.F.R. § 1503.1 (1985). In addition, under section 309 of the Clean Air Act, 42 U.S.C. § 7609 (1982), the EPA must review and comment on all environmental impact statements. These expert agency comments are typically written by career personnel and provide an important check on the lead agency impact statement. And, even if not heeded by the agency, the comments constitute weighty evidence in the record upon which a citizen may rely in a later challenge to the agency action and may provide the court with grounds to overturn the agency action. See, e.g., Fritofsn v. Alexander, 14 Envtl. L. Rep. (Envtl. L. Inst.) 20,266, 20,268, (S.D. Tex. 1984) (comments of Fish and Wildlife Service and National Marine Fisheries Service); Action for Rational Transit v. West Side Highway Project, 536 F. Supp. 1225, 1241 (S.D. N.Y. 1984) (comments of EPA, Fish and Wildlife Service, and National Marine Fisheries Service), aff'd, 699 F.2d 614, 616 (2d Cir. 1982); see also Hopi Indian Tribe v. Block, 19 Env't Rep. Cas. (BNA) 1215, 1220-21 (D.D.C. 1981) (agency statement adequate); Reid v. Marsh, 20 Env't Rep. Cas. (BNA) 1337, 1344 (N.D. Ohio 1984) (Army Corps consulted with Fish and Wildlife Service). But see Report Says Federal Agency Neglect Causing Extensive Destruction of New Jersey Wetlands, 15 Env't Rep. (BNA) 1234 (Nov. 9, 1984) (Fish and Wildlife Service report critical of EPA and Army Corps consideration of Service concerns).

federal levels. Still, these problems do not deny the major overhaul that has occurred in the nature of government's role in the environmental area over the last fifteen years. They merely confirm it.

The public trust doctrine, however, continues to resist the ghost of narrow-minded prodevelopment—government as it was, not as it is. In so doing, the doctrine serves no meaningful role in the ongoing debate on the merits;\textsuperscript{366} it has become a relic of the past ready to be discarded.

In sum, the apparent litigation achievements of the public trust doctrine dim considerably, if not diminish altogether, when studied in light of independent developments in more generally applicable areas of the law, such as standing, nuisance, the police power, and administrative law. The doctrine's successes in various cases amount to little more than isolated reflections of these more fundamental trends, but have a public trust label prominently attached. In addition, the basic force of the public trust doctrine rests on legal theories fundamentally inconsistent with current notions of sovereignty and property in natural resources. The doctrine's only independent role remains much where it began in this country, with the narrow concern of access to beaches and beds of navigable waters.\textsuperscript{367}

IV. The Future of the Public Trust Doctrine in Modern Natural Resources Law

Mere irrelevance is not, of course, enough to justify a call to abandon public-spirited invocation of the doctrine. Little in the law, let alone legal academia, would likely survive such an exacting standard. Rather, the appropriate remedy depends on whether use of the public trust label has or potentially could have significant adverse effects. It is to this inquiry that the Article now turns.

\textsuperscript{366} Comment, \textit{supra} note 10, at 487; \textit{see also} Tarlock, \textit{supra} note 362, at 414 (no consensus about environmental drains exists to answer tough environmental policy issues).

\textsuperscript{367} Courts often cite growing public demand for beach access to justify expanding the trust doctrine. \textit{See}, e.g., Matthews v. Bay Head Improvement Ass'n, 95 N.J. 306, 323-25, 471 A.2d 355, 364, \textit{cert. denied}, 105 S. Ct. 93 (1984). It is not at all clear, however, that the public trust notion is at all necessary to guarantee access. In Appleby v. City of New York, 271 U.S. 364 (1926), the Supreme Court, although holding that the public trust doctrine no longer applied to the submerged bed in question, took pains to point out that public access still was in order:

\textit{Of course we do not intend to say that, under such deeds as these, as long as water connected with the river remains over the land conveyed and to be filled, navigation may not go on and boats may not ply over it . . . . But it is a very different thing to say that the city which has parted with the \textit{jus publicum} and the \textit{jus privatum} . . . remains in unrestricted control of navigation with the right to dredge them, or appropriate the water over them . . . .}

\textit{Id. at 397-98.} Finally, as one commentator has pointed out, courts can base a finding that a right of public access exists on several different doctrines, including the trust doctrine, custom, prescriptive easements, and implied dedication. \textit{See} Livingston, \textit{supra} note 75, at 679. That author, moreover, forcefully argues that all of these tests generally consider the same factors and courts should apply one unified test that candidly expresses those factors being considered. \textit{See id. at} 685.
Evaluating the public trust doctrine on the basis of the adverse effects criterion leads this author to conclude that continued reliance on the doctrine is ill advised. Continued use of the doctrine ultimately threatens to impede environmental protection and resource conservation goals and possibly render Pyrrhic earlier advances. Most fundamentally, the doctrine's operation exacerbates a growing clash in liberal ideology within natural resources law—between the need for individual autonomy and security, traditionally tied up in private property rights, and the demands of longer-term collectivist goals expressed in environmental protection and resource conservation laws. In addition, totally apart from destructive ideological conflicts the trust doctrine creates, relying on the doctrine is no longer sound strategy. The doctrine no longer reflects current environmental values and unduly relies on a proenvironment judicial bias. Recent Supreme Court precedent strongly suggests, moreover, that the doctrine's fiction carries little weight in the legal balance. This Article discusses these concerns—ideologic and strategic—in turn.

A. Toward a Liberal Rejection of the Public Trust Doctrine

Natural resources law is currently undergoing a major transformation. Traditionally, natural resources law was a scheme of laws riddled over time by a bizarre array of formalistic property-based doctrines designed to achieve specific social goals. It is gradually evolving into a more unified system of rules in which competing private and social goals in natural resources are openly debated and limited private rights are assigned by the government. The public trust doctrine, by inevitably depending on traditional notions of property law and trusts, conflicts with the direction that current environmental protection and natural resource conservation concerns are leading legal rules. As a consequence, the doctrine threatens to undermine the important developments in natural resources law.

368. The Supreme Court's recent decision in Summa Corp. v. California ex rel. State Lands Comm'n, 104 S. Ct. 1751 (1984), reaffirms the public trust doctrine's inability to escape its historical ties to property law and its consequent vulnerability to attack. See supra note 352. In Summa the Court held that the state's public trust authority, which the Court repeatedly described as an "easement," was lacking because the state had failed to assert the interest in a patent proceeding mandated by federal law one hundred years earlier. The purpose of the proceeding was to remove any clouds there might be on titles to California lands the private ownership of which derived from earlier conveyances by the Spanish or Mexican government in accordance with Act of Mar. 3, 1851, ch. 41, § 8, 9 Stat. 631, 632. Certainly, as in Summa, advocates aiming to undercut the viability of the doctrine will emphasize its property rationale. See, e.g., Official Transcript of Oral Argument at 5 (argument of counsel for petitioner), Summa Corp. v. California ex rel. State Lands Comm'n, 104 S. Ct. 1751 (1984). But see Coquillette, supra note 10, at 813-14 (arguing that trust doctrine's firmest basis is its strong ties to ancient property law).
1. Erosion of a Property-Based Doctrine

The thrust of recent developments in environmental and natural resources law has been to replace already eroding traditional notions of private property rights in natural resources with a scheme of government-administered and defined private entitlements to those resources explicitly premised on continuing sovereign regulatory authority.\(^{369}\) The history of natural resources law in this country, which influenced early environmental law, has been marked by a series of obscure legal rules rooted in a wide variety of property law doctrines. Esoteric doctrines such as the rule against perpetuities,\(^{370}\) adverse possession,\(^{371}\) abandonment,\(^{372}\) the rule of capture,\(^{373}\) the common enemy doctrine,\(^{374}\) the English rule of absolute ownership,\(^{375}\) traditional riparian law,\(^{376}\) lost grant,\(^{377}\) ancient lights (or lack

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369. Cf. Stewart, supra note 351, at 1556-59 (courts not capable of exercising regulatory function of allocating entitlements).
370. "No interest is good unless it must vest, if at all, not later than twenty-one years after some life in being at the creation of the interest." Leach, Perpetuities in a Nutshell, 51 Harv. L. Rev. 638, 639 (1938). See generally J. Morris & W. Leach, The Rule Against Perpetuities (1962).
373. The rule of capture basically proposes that the right of a landowner to capture natural resources, such as wild animals, by traps, or groundwater or oil and gas, by drilling, is absolute. Any injury resulting to neighbors who had expectations of obtaining the resource for themselves is damnum absque injuria. The leading English case on the rule, Acton v. Blundell, 152 Eng. Rep. 1225 (Ex. 1843), has strongly influenced the development of American property law. 2 American Law of Property, supra note 371, § 10.5.
374. See Keys v. Romley, 64 Cal. 2d 396, 400, 412 P.2d 529, 531, 50 Cal. Rptr. 273, 275 (1966):
   Stated in its extreme form, the common enemy doctrine holds that as an incident to the use of his own property, each landowner has an unqualified right, by operations on his own land, to fend off surface waters as he sees fit without being required to take into account the consequences to other landowners. . . . See generally id. at 400-02, 412 P.2d at 531-32, 50 Cal. Rptr. at 275-76.
376. Under strict traditional riparian law, a downstream riparian was entitled to the water that flowed past his lands undiminished in either quantity or quality. Any diminution by an upstream riparian entitled the downstream riparian to sue the former for damages, even without a showing of actual harm. See Elliot v. Fitchburg R.R., 64 Mass. (10 Cush.) 191, 193 (1852).
377. "Under the lost-grant doctrine the courts instructed juries that they [must] find, from the fact that a particular use had been made, that a grant of the privilege of making it had been made and that the grant had been lost." 2 American Law of Property, supra note 371, § 8.50; see Simonton, Fictional Lost Grant in Prescription—A Nocuous Archasim, 35 W. Va. L.Q. 46, 47 (1928).
thereof), the law of waste, restraints against alienation, and the Statute of Frauds, and absolute maxims such as *cuius est solum eius est usque ad colemum et usque ad inferno,* and *primus in tempore, potior est in jure* dominated the substance of legal rules defining the scope of private rights in essential natural resources such as land, water, oil, and gas. Each doctrine or maxim sought to influence either the initial allocation or the subsequent distribution of the affected natural resources in a manner designed to promote identifiable social goals.

The last one hundred years, however, have been marked by a constant struggle to free natural resources law of the older, often rigid property rules and maxims. Many of the rules once served important functions; time, however, has since passed them by. Three primary reasons for this development prevail. First, society has greatly changed and social values have changed accordingly, rendering obsolete the objectives of

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378. "[A]t common law, the land owner had no legal right, in the absence of an easement or uninterrupted use and enjoyment for a period of 20 years, to unobstructed light and air from the adjoining land." Fontainebleau Hotel Corp. v. Forty-Five Twenty-Five, Inc., 114 So. 2d 357, 359 (Fla. Dist. Ct. App. 1959).


381. The Statute of Frauds requires, *inter alia,* written evidence for conveyances concerning the creation or assignment of certain interests in land. The basic purpose of the requirement was to redress a fear that "because of perjury . . . people might be held on promises which they had never made." Willis, The Statute of Frauds—A Legal Anachronism, 3 Ind. L.J. 427, 427-29 (1928).

382. "Whoever owns the soil owns all the way to heaven and all the way to the depths."

383. "First in time, first in right."

384. See 5 *American Law of Property,* supra note 371, § 20.5 (role of public policy in fashioning law of waste); 6 *American Law of Property,* supra note 371, § 26.1 (role of public policy in fashioning law favoring freedom of transfer); Cohen, supra note 238, at 22; Donahue, supra note 211, at 33-34, 37-38; Horwitz, supra note 210, at 279, 287-88; Philbrick, supra note 211, at 395. Professor Rodgers sees the common law of waste doctrine as supporting a general legal principle of a duty between succeeding generations (if good husbandry toward natural resources. See W. Rodgers, supra note 198, at 248-51; see also Frug, Why Neutrality?, 92 Yale L.J. 1591, 1594 (1983) (arguing that creation and interpretation of a property right are never value-neutral).

old rules. These rules, like many property law rules, are weighed down by historical baggage of little continuing relevance. Second, several of the earlier doctrines were based on assumptions about the physical characteristics of resources and the limits of technology that advances in science have since discredited. Third, the pace of change in recent decades has quickened to such a level that we now require a flexibility in our legal rules that the older doctrines do not admit.

The steady erosion of these traditional property law doctrines, however, is not an isolated event. It is part of a much wider trend in the law that challenges the very notion of private property rights in natural resources. Most simply put, as a result of dramatic and accelerating social, economic, and scientific changes in this country over the last one hundred years, the public interest in protecting natural resources and ensuring the most efficient or socially optimal distribution of products has increased exponentially and has overtaken individual interests. Most persons no longer live in rural settings with ready access to private ownership rights in basic natural resources and thus most must rely on others...
to exercise rationally those rights. Private ownership of natural resources, moreover, does not reside as in the past with individuals often very concerned about the need to preserve sufficient resources for their children and their children's children. Increasingly, it is in the hands of corporate giants, which are guided in their decisionmaking by short-term profit maximization. Technology does not provide an outer limit on resource exploitation, but instead it has advanced to the stage that threatens exploitation of monumental proportions. At the same time, advances in other, more subtle areas of the physical, chemical, and biological sciences only recently have begun to suggest the full extent of the fragile interdependencies in our natural environment. These advances reveal the possibly irreversible consequences of manipulating the environment to meet immediate demands.

The most obvious implication of this increased public interest has been greater demand for direct governmental involvement in decisions that affect the relative availability and quality of important natural resources. The most pernicious implication is that the most central justification of private property rights in those resources is undermined. Private property rights today are justified principally on the market theory that a rational profit maximizer who owns natural resources will utilize those resources in a manner that not only optimizes his or her own in-

391. See supra note 280, at 456-57 (fundamental nature and need for basic natural resources, totally apart from their physical characteristics, will mean erosion of private property rights, despite dangers inherent in communism); see also Sax, supra note 235, at 493.

392. This has been the precise concern behind the recent enactment of state laws restricting corporate ownership of farmland. See Absentee Ownership of Farmland: Hearing Before the House Subcomm. on Family Farms, Rural Development, and Special Studies of the Comm. on Agriculture, 96th Cong., 2d Sess. 5 (1980) (testimony of Iowa Attorney General Thomas J. Miller); see also supra note 302.

393. See generally Council on Envtl. Quality, Tenth Annual Report (1979) (protection of environment has become strong American value); see also L. Becker, supra note 225, at 109-10 (resources viewed as inexhaustible centuries ago are in imminent danger of being exhausted); Elliott, Anthropologizing Environmentalism (Book Review), 92 Yale L.J. 888, 894 (1983) (scientific evidence of environmental damage distinguishes modern pollution beliefs from those of primitive cultures based on supernatural); Furrow, Governing Science: Public Rights and Private Remedies, 131 U. Pa. L. Rev. 1403, 1403 (1983) (scientific advances create risks with unknown probabilities faster than the risks can be assessed). For a general discussion of the important relationship between the acquisition and application of scientific and technical knowledge and substantive policy throughout American legal history, see J. Hurst, supra note 222, at 157-213 (1977).

394. See supra text accompanying notes 360-66; see also Friedman, Exposed Nerves: Some Thoughts on Our Changing Legal Culture, 17 Suffolk U.L. Rev. 529, 545 (1983) ("This is a society of strangers. We depend on each other to a fantastic degree; but the people we depend on are, by and large, people we never see face to face, over whom we have no control. . . . We rely on the state—on rules of law—to protect us.") (emphasis in original).

395. See H. Berman, supra note 230, at 34-35; Philbrick, supra note 211, at 724; Sax, supra note 235, at 484.
terest but also society’s overriding interest in the efficient use of the resource.\footnote{396}{See \textit{Anderson \& Hill, Establishing Property Rights in Energy: Efficient v. Inefficient Processes}, \textit{1 Cato J.} 87, 89-91 (1981); cf. \textit{Friedman, The Economics of the Common Pool: Property Rights in Exhaustible Resources}, \textit{18 UCLA L. Rev.} 855, 880 (1971) (owners of scare resources seek stable long-term profits and will not increase production for short-term gains); \textit{Grey, The Disintegration of Property}, in \textit{Property: Nomos XXII} 177-78 (J. Pennock \& J. Chapman eds. 1980) (property owner’s pride and concern for reputation among his neighbors encourages him to take good care of property); \textit{Horwitz, supra} note 210, at 260-61, 290 (in mid-nineteenth century, government began encouraging private ownership and monopoly to promote efficiency).} Notions of individual personality and security, although still present, are generally mere incidental justifications for private property rights. The clear implication of these changes in social demographics and advances in science is that society cannot so easily rely on the free market premise that a private decisionmaker acting in his or her own best interest will also act in society’s best interest. The private decisionmaker will be unaware of the social costs of the decision. Although this has always been true, the notion of externalities, reflected in the concept of rights created by dependencies between various property owners, has generally been a minor concern of property law, or at least it has been left largely unstated.\footnote{397}{See, e.g., \textit{2 American Law of Property, supra} note 371, at 229-31 (neighboring property owners have rights in one another’s land under certain circumstances). The sufficiency of private contractual arrangements to address these types of externalities is implicit in Justice Holmes’ opinion in \textit{Pennsylvania Coal}. See \textit{supra} text accompanying notes 245-61.} Today those unconsidered social costs may be tremendous in the natural resources context.\footnote{398}{See \textit{J. Dales, Pollution, Property and Prices} 39-57 (1968); \textit{Calabresi \& Melamed, supra} note 211, at 1106-10; cf. \textit{Coquillette, supra} note 10, at 778-79 (changes in nuisance law a response to increasing population of urban areas and increasing conflicts as competition for space intensified); \textit{Comment, The Dormant Commerce Clause and the Constitutionality of Intrastate Ground Water Management Program}, \textit{62 Tex. L. Rev.} 537, 540-41 (1983) (no incentive to extract groundwater at efficient rate under traditional property rules).} For example, the cost to future generations is of special concern, particularly in light of our growing exploitation abilities.\footnote{399}{See \textit{d’Arge, Schulze \& Brookshire, Carbon Dioxide and Intergenerational Choice,} \textit{72 Am. Econ. Rev.} 251, 255 (1982); \textit{D. Mandelker, Environment and Equity: A Regulatory Challenge} 13-14 (1981); \textit{see also Steiner, Slavery, Socialism \& Private Property}, in \textit{Property: Nomos XXII} 252-53 (J. Pennock \& J. Chapman eds. 1980) (user of existing exhaustible resources cannot know the loss his use will cause future generations and therefore cannot compensate them). The problem of leaving future generations with scarce natural resources is not, of course, just a modern concern. The rule of perpetuities, it has been argued, primarily reflected a public policy to strike “‘a fair balance between the desires of members of the present generation, and similar desires of succeeding generations, to do what they wish with the property which they enjoy.’” \textit{See} \textit{J. Morris \& W. Leach, supra} note 370, at 17 (quoting \textit{Simes, Public Policy and the Dead Hand} 58 (1955)).}\footnote{400}{For a discussion of the impact of environmental externalities, see \textit{Davis \& Kamien,}}
essential point remains that, at least for natural resources, the problem of externalities has become so acute that the very notion of traditional private property rights in those resources is in doubt.401

2. The Rise of “New Property” in Natural Resources Law

The clear trend in environmental law and natural resources law today is to replace traditional notions of private property rights in natural resources with an intricate scheme of government-administered entitlements and permits.402 This trend is most evident in developing governmental programs respecting resources that have traditionally been the object of exclusive private ownership, such as land, groundwater, and fossil fuels. Detailed land use plans restrict private decisionmaking;403 and even when development such as mining is allowed by law, subsequently restoring land to its approximate natural condition may be required.404 Groundwater, under the common law, was the absolute property of the overlying...

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401. See L. BECKER, supra note 225, at 1, 116-18; see also Sax, supra note 235, at 485, 489. Even stalwart supporters of private property rights such as John Locke recognized that essential natural resources involved special considerations and, accordingly, apparently have justified their private property rights in those resources on the presence of minimal negative externalities. See T. ANDERSON, WATER RIGHTS 16 (1983). Critics of Locke’s general labor theory of property, moreover, have stressed its inapplicability to scarce natural resources and its failure to account for the impact of private property on future generations and the exhaustibility of certain natural resources. See L. BECKER, supra note 225, at 42-43, 43, 94-95; Steiner, supra note 399, at 251-53, 257-59. They also forcefully argue that because the value of natural resources is not initially “produced” by labor; they are less susceptible to a claim based on fruits of labor. See Steiner, supra note 399, at 250; Yandle, supra note 238, at 4. More broadly, others have argued that once society becomes industrialized and urbanized and highly interdependent, the labor theory of property loses meaning, because almost no individual effort is unaided by society. See Cohen, supra note 238, at 16-18.

402. See, e.g., Grey, supra note 396, at 79-81 (trend in modern capitalist societies toward gradual dissolution of private property rights); Oakes, supra note 224, at 583 (importance of individual property rights depends on political philosophy popular at any given time); see also Reich, supra note 283, at 737 (citizens already depend upon government to redistribute wealth); Freyfogle, Land Use and the Study of Early American History, 94 YALE L.J. 717, 736 (1985) (inquiring whether complete ownership of property in natural resources may be replaced with usufruct, with ultimate ownership in public). Professor Grey argues that once the theory of property as a bundle of interests was firmly substituted for thing-ownership, the ultimate consequence was the cessation of property as an important category in legal theory. See Grey, supra note 396, at 81. Arguably, this is precisely what we are witnessing in natural resources law.

403. For reviews of the development of land use controls in the United States, see F. BOSSELMAN & D. CALLIES, supra note 297, at 1-5; Large, This Land is Whose Land? Changing Conceptions of Land as Property, 1973 WIS. L. REV. 1039, 1050-58.

property owner\textsuperscript{405} and is now the object of strict state regulatory allocation under new laws.\textsuperscript{406} The production and exploitation of fossil fuels is not only the subject of massive regulation,\textsuperscript{407} but also the object of substantial taxes that effectively transfer the economic wealth of the resource to the general public.\textsuperscript{408}

This same trend extends to those natural resources historically considered incapable of private ownership, such as air, oceans, arctic zones,
and space, but no longer so viewed in light of recent technological advances that allow, if not exclusive possession, then irreversible despoliation.\footnote{409} Current laws direct the government to allocate rights in those resources\footnote{410} and, in the case of pollution control laws, allow private markets in these "new property" rights in natural resources.\footnote{411} The goal of the new property rights is to reemphasize the importance of private markets in achieving allocational efficiency once the government has had the opportunity to set the initial ground rules.\footnote{412}

Finally, the trend toward legislative replacement of common-law rights with limited entitlements defined by the government in the first instance extends to traditional common-law tort rights as well as common-law property rights.\footnote{413} In the environmental area, for example, statutes limit or

\footnote{409} Hardly any identifiable resources are outside the potential embrace of technological advances aimed at harnessing their value for exclusive use. Recent years have even witnessed Idaho suing Wyoming for alleged "cloud rustling." Minoque, The Concept of Property and Its Significance, in \textit{PROPERTY: NOMOS XXII} 12 n.19 (J. Pennock & J. Chapman eds. 1980).

\footnote{410} That the government now effectively distributes property rights in these resources follows from the government's assertion of power, in the first instance, to require a permit for activities that may affect the resource. \textit{See supra} text accompanying notes 277-87.

\footnote{411} Recently a two-column ad ran in the \textit{Wall Street Journal} offering the services of a brokerage firm for the sale and purchase of air pollution rights. \textit{See Air Emission Offsets Available}, Wall St. J., Oct. 26, 1982, at cols. 5-6. EPA also allows gasoline refiners to store and sell rights to use lead in federally regulated products. \textit{See Extension of Lead Trading Rights to 1987 for Gas Refiners Issued As Policy By EPA, 15 \textit{[Current Developments] Env't Rep. (BNA)} 2084 (Mar. 9, 1985). Even more recently, the United States Fish and Wildlife Service has approved a project in which a developer is awarded credits for investment in wildlife habitat protection and restoration that the developer may "bank" and either withdraw on its own to support a later destructive developmental project or sell to another developer who wishes to apply the credit to its own proposal. To date, the availability of this banking of credits has been relevant to issuing a federal permit under section 404 of the Clean Water Act, 33 U.S.C. § 1344 (1982), for wetlands development. \textit{See M. Zagata, Mitigation by "Banking" Credits—A Louisiana Pilot Project at 2 (unpublished paper on file with the Iowa Law Review). See generally T. Anderson, supra note 401, at 318-20 (water quality); R. Crandall, \textit{Controlling Industrial Pollution} 166-67 (1983) (same); J. Dales, supra note 398, at 77-100 (water and air pollution rights); Comment, Who Owns the Air? Emission Offset Concept and Its Implications, \textit{9 ENVTL. L. 375, 591-92, 599-600 (1979) (discussing impact of 1970 Clean Air Act on property rights in air resources); Comment, Markets in Air: Problems and Prospects of Controlled Trading, \textit{5 HARV. ENVTL. L. REV. 377, 377, 379, 399-403 (1981) (same).}

\footnote{412} \textit{See generally} Yandle, supra note 238, at 8-11 (discussing the transition from publicly held to privately held property rights). What is especially interesting about the trend in private property rights in natural resources is that rights in resources such as land, traditionally a matter of exclusive private ownership, and rights in resources such as air, traditionally a matter of communal ownership, apparently converge to a middle ground at which the government attempts to accommodate society's interest in environmental quality and resource conservation and its simultaneous interest in providing for some level of private property rights. The end product will likely be a scheme of limited rights in natural resources originating in the government.

\footnote{413} Traditional common-law tort principles simply cannot cope with the conflicts that occur between individuals in our industrialized society. The formalistic rules established to handle traditional tort cases fall far short when applied by courts to the types of in-
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prescribe liability for harm caused by certain environmental catastrophes.\textsuperscript{414} According to the courts, a “person has no property, no vested interest, in any rule of the common law.”\textsuperscript{415}

The public trust doctrine simply has no place in this emerging scheme. The doctrine finds its home in the legal analytical framework supported by traditional property dogma currently (and appropriately) being abandoned. It was essentially the public property analogue to those private property concepts, which are now eroding. The doctrine’s main purpose, like notions of “qualified property” and “property affected with a public interest,”\textsuperscript{416} long since discarded, was to provide the sovereign with a ready answer to claims of the sanctity of private property rights at a time when governmental power was itself rooted in its own property holdings.\textsuperscript{417} To be sure, the public trust doctrine has tremendous mystical and romantic appeal,\textsuperscript{418} which no doubt partly explains its revival in recent years. It must be every litigating lawyer’s dream to uncover that ancient case with still-binding precedent that turns the tide by establishing in the client some invincible right. From that perspective, what is better than a right grounded in Roman law that purported to protect the quality of the natural environment and the rights of unrepresented future generations in its preservation?\textsuperscript{419} Still, just as notions of absolute private property rights in natural


\textsuperscript{416} See E. Freund, supra note 215, § 373; Walker, supra note 385, at 377-79.


\textsuperscript{418} See Deveney, supra note 10, at 29; Stevens, supra note 10, at 232 (public trust doctrine related to myth of our creation). See generally Smith & Weissstub, \textit{Introduction}, to \textit{The Western Idea of Law} (J. Smith & D. Weissstub eds. 1983) (discussing law as fulfilling man’s mythical and dramatic needs).

\textsuperscript{419} In this way, the trust doctrine clearly benefits from an “emotive force of pretense”
resources have been and are being eroded in the wake of modern environmental and natural resources laws, so too it is only appropriate that their public property analogues be similarly abandoned. Absolutist claims on either side of the ledger are, at best, unhelpful. At an earlier time, the doctrine no doubt served the quite useful function of focusing legal analysis on a growing public concern—preserving and conserving natural resources. That initial task of refocusing has been accomplished. The difficult problems that beset the development and implementation of modern environmental and natural resources law are no longer aided by resort to a legal doctrine, such as the public trust.

3. The Need for Candor and Protection of Individual Rights in Natural Resources Law

Undoubtedly, the most difficult problem facing environmental and natural resources law is to reestablish some level of certainty and security in private interests in natural resources. While traditional notions of absolute private property rights are no longer in order, defining the scope of the emerging new property rights in those resources is critical to the long-term viability of the environmental protection movement. Reliance on the private market is not only a relentless theme in political life that cannot be ignored, but even more fundamentally, the total erosion of private

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that adds to its persuasiveness. L. Fuller, supra note 164, at 54.

420. The history of property rights in natural resources has suffered from extreme claims at either end of the spectrum that either the public sector or the private sector possess absolute rights. See Cohen, supra note 238, at 21; Philbrick, supra note 211, at 708-10. One should not, "seeing the perversion of principles, follow the besetting fallacy of men and seek salvation from one evil in its opposite, as if the means of escaping death by fire were freezing to death." Philbrick, supra note 211, at 731 (quoting F. Lieber, On Civil Liberty and Government 19 (3d ed. 1911)).

421. See L. Tribe, supra note 179, at 538; Philbrick, supra note 211, at 731.

422. Professor Trelease has ably criticized the use of trust doctrine notions as a basis for settling conflicts over water rights. See Trelease, Government Ownership & Trusteeship of Water, 45 Calif. L. Rev. 638, 645-49 (1957) [hereinafter cited as Trelease, Government Ownership]; see also Trelease, Choices for Hawaii's Future Water Code—The Lessons of Past Experience 23-30 (Sept. 27-28, 1984) (remarks before Conference on Water Regulation in Hawaii: The Proposed Statewide Water Code) (copy on file with the Iowa Law Review). Professor Trelease argues that the doctrine impedes open debate on the merits by injecting irrelevant property law considerations into the analysis. Trelease, Government Ownership, supra, at 639, 654. Trelease added that it would be far better to describe the nature of sovereign authority over waters as an exercise of state police powers. See id. at 643-45. The same concerns are multiplied now that the public interest in natural resource conservation is even greater and utilization of the doctrine appears to be on the rise. See also Rosen, supra note 16, at 612 (recommending abandonment of public trust doctrine).

423. See B. Ackerman, supra note 237, at 1-5; Coquillette, supra note 10, at 763. Compare Oakes, supra note 224, at 596-97 (arguing protection of private property rights currently on rise) with Sax, supra note 235, at 481 (arguing protection of private property rights currently on demise). At present, a persistent school of thought suggests a return to exclusive reliance on the marketplace to allocate natural resources. Under this view,
property rights ultimately would threaten individual liberty. A time may have once existed when using complex technical legal doctrines, such as the public trust doctrine, allowed society to maintain the facade of economic security while "new property . . . swept away old." So too, once perhaps "the uncertainties of human existence reinforced a culture of low hopes and demands from law and government." That is no longer the case. Changes today are simply too many and too quick, and they routinely come within the span of individual human memory. And in this country a legal culture has developed that prompts private individuals to look to the law to meet their demands for justice and compensation when they suffer losses.

Consequently, environmental and natural resources laws cannot depend for long on vague notions of "public interest" any more than they can rely on property-based notions such as the public trust doctrine to justify their impact on private expectations. As in the past, liberal ideology, exclusive, well-defined private property rights to those resources must be assigned and honored by the legal system. See generally T. Anderson, supra note 401, at 119-30, 145-47, 197, 223-36, 274-78; Anderson & Hill, supra note 396; Yandle, supra note 238, at 10. Proponents argue that governmental regulation inevitably leads to gross inefficiencies. See T. Anderson, supra note 401, at 4-5, 88, 131-33; see also De Vany, Eckert, Meyers, O'Hara & Scott, A Property System for Market Allocation of the Electromagnetic Spectrum: A Legal-Economic-Engineering Study, 21 Stan. L. Rev. 1499, 1507 (1969). Some even contend that the Sierra Club and similar organizations can buy land for preservation, if they so choose, to remedy the problem of future generations being unrepresented in the marketplace. See A. Church, supra note 232, at 8. The purchase of land has been a traditional approach of the Nature Conservancy, a national organization dedicated to the preservation of areas of significant value in their natural condition. There is, however, a competing school of thought that private property rights are unnecessary. Proponents of this view argue that common rights to certain communal resources historically have not been inefficient. See Ciriacy-Wantryp & Bishop, supra note 76, at 717-24; Kennedy & Michelman, Are Property and Contract Efficient?, 8 Hofstra L. Rev. 711, 714 (1980); see also Coquillete, supra note 10, at 809 & n.232. The truth, no doubt, lies somewhere in the middle. The proper approach for each resource depends first on its physical characteristics and second, on its relation to human and other needs. These two constraints will not allow either absolute private rights or total communal rights. Indeed, at times each side appears to admit as much. The former admits that because of externalities associated with overpumping of aquifers some groundwater must remain unallocated, see T. Anderson, supra note 401, at 239-41, and the latter approves of governmental quotas of certain traditionally "shared" resources like fish, see Ciriacy-Wantrup & Bishop, supra note 76, at 723.

424. "Property does not have rights. People have rights.... In fact, a fundamental interdependence exists between the personal right to liberty and the personal right in property. Neither could have meaning without the other. That rights in property are basic civil rights has long been recognized." Lynch v. Household Fin. Corp., 405 U.S. 538, 552 (1972). Professor Pound saw property as essential to individual security. See Pound, supra note 249, at 222-24; see also L. Becker, supra note 225, at 75-76, 79-80; Oakes, supra note 224, at 624; Philbrick, supra note 211, at 713-14; Reich, supra note 283, at 787. See generally Radin, Property and Personhood, 54 Stan. L. Rev. 957 (1982).

425. Horwitz, supra note 210, at 251.

426. Friedman, supra note 394, at 544.

427. Id. ("over the course of a century or so there has developed a general expectation of justice, and a general expectation of repayment for loss") (emphasis deleted).
having once thrown off the yokes of feudalism, will ultimately rebel unless a more narrowly circumscribed justification is offered that preserves minimum standards of individual security. Individual liberty and security was clearly the concern of Justice Holmes when he wrote the majority opinion in Pennsylvania Coal Co. v. Mahon, which struck down a state law restricting coal mining activities. Pennsylvania Coal continues to cast a shadow over environmental causes. Individual liberty and security now appears to be a growing concern of Justice Brennan in the environmental property law context, which is worthy of especial reflection, because he is undoubtedly the member of the Court most sympathetic to environmental concerns.

428. L. Becker, supra note 225, at 74 ("[I]f property rights are to mean anything, surely they must mean that one can refuse to use the property to approximate the ideal of everyone’s rational self-maximization.") (emphasis in original); Reich, supra note 283, at 774 ("Liberty is the right to defy the majority and to do what is unreasonable. The great error of the public interest state is that it assumes an identity between the public interest and the interest of the majority."). Professor Reich, in his classic article on the increasing reliance of the individual on governmental largesse, warned of the dangers to individual liberty inherent in the "public interest" standard. See Reich, supra note 283, at 756-74. Reich compared the rise of the public interest state, in which nothing is said to be "owned" or "vested" in individuals, to feudal times. See id. at 768-71; cf. Snare, The Concept of Property, 9 AM. PHIL. Q. 200, 205 (1972) (comparing rights of individuals in a corporation to rights of serfs in feudal system). Although Reich was not concerned directly with private property rights in natural resources, his discussion is extremely pertinent. First, his entire thesis was based on the stated premise that traditional property rights were on the decline as government was becoming the sole supplier of those rights. See Reich, supra note 283, at 733-34. Second, rights in natural resources are becoming a matter of governmental largesse, both because government has retained property rights in vast public lands to which it only issues limited leases and in the wake of extensive governmental permitting schemes. Consequently, Reich’s concerns are now equally applicable to individual rights in natural resources. In both cases, property originates in the state. The problems with answering disappointed private expectations with the simple rationale that "government largesse" is not a "right," exist equally in both circumstances. Id. at 778-79. Thus, just as Reich faults reformers in the 1930’s for going too far in reacting to excesses of private property, see id. at 772-73, environmentalists must now take care to avoid similar excesses in the context of natural resources. The need for balance is, of course, on both sides of the equation. See Frug, supra note 229, at 1098-99, 1090 (faulting liberalism for excessive stripping of power of towns in response to perception that towns restricted individual liberty); see also Shaffer, Men and Things: The Liberal Bias Against Property, 57 A.B.A. J. 123, 125-26 (1971).

429. 260 U.S. 393 (1922); see supra text accompanying notes 245-49.
430. Perhaps the most telling example is Justice Holmes’ recognition that “the natural tendency of human nature is to extend the [police power] qualification more and more until at last private property disappears.” See 260 U.S. at 415.
431. See D. Mandelker, supra note 399, at 38-54.
This should not be surprising. Individual autonomy and security have traditionally been concerns of liberal members of the Court in the context of “new property” rights in matters such as social security and welfare benefits.\textsuperscript{433} Indeed, liberal thought, in particular concern for private autonomy and security, was the main impetus behind the framers’ inclusion of the just compensation clause in the fifth amendment.\textsuperscript{434} No valid reason supposes that liberal ideology will tolerate governmental deprivation of individual expectations on the basis of general public interest standards or conclusory labels of subordinate interests in the natural resources context any more than it has tolerated governmental deprivation in the context of these “traditional” new property rights.\textsuperscript{435}

concurring in the majority decision that no final decision was reached in the lower court and thus the Court should not reach the merits, see id. at 633-34 (Rehnquist, J., concurring), added that he “would have little difficulty agreeing with much of” Justice Brennan’s dissent. See id. at 633-34 (Rehnquist, J., concurring). Moreover, even the majority added that the constitutional merits of the taking claim were “not to be cast aside lightly.” See id. at 633.

Several courts of appeals have subsequently read Justice Brennan’s dissent as representing the view of a majority of the Court. See Hamilton Bank v. Williamson County Regional Planning Comm’n, 729 F.2d 402, 408-09 (6th Cir. 1984), re’ed on other grounds, 105 S. Ct. 3108 (1985); Martino v. Santa Clara Valley Water Dist., 703 F.2d 1141, 1148 (9th Cir.), cert. denied, 464 U.S. 847 (1983); Barbarin v. Fanagis, 694 F.2d 476, 482 n.5 (7th Cir. 1982); Devines v. Maier, 665 F.2d 138, 142 (7th Cir. 1981); Hernandez v. City of Lafayette, 643 F.2d 1188, 1199-1200 (5th Cir. 1981), appeal dismissed, 455 U.S. 901 (1982); see also Williamson County Regional Planning Comm’n v. Hamilton Bank, 105 S. Ct. 3108, 3124-25 (1985) (Brennan, J., joined by Marshall, J., concurring) (adhering to views expressed in San Diego Gas dissent). But see Citadel Corp. v. Puerto Rico Highway Auth., 695 F.2d 31, 33 n.4 (1st Cir. 1982), cert. denied, 464 U.S. 817 (1983) (refusing to read San Diego Gas dissent as reflecting majority view of Supreme Court). See generally Kmiec, Regulatory Takings: The Supreme Court Runs Out of Gas in San Diego, 57 IND. L.J. 45 (1982) (arguing in favor of damages remedy); Stoeckel, San Diego Gas: Problems Pitfalls and a Better Way, 25 WASH. U.J. URBAN & CONTEMP. L. 3, 5-7 (1983) (arguing dissent in San Diego Gas misguided). More recently, however, in a regulatory takings case in which the Court again stopped short of reaching the damage remedy issue, Justice Stevens filed a concurring opinion in which he took issue with the San Diego Gas dissent. Justice Stevens argued that damages were not a constitutionally compelled remedy for a police power regulation deemed a taking, even for the period of time between the regulation’s enactment and its ultimate invalidation. Instead, one must assume good faith of regulators and so long as fair procedures are available to challenge the regulation, no independent damage remedy arises under the takings clause for the interim harm caused. See Williamson County, 105 S. Ct. at 3125-27. In the 1985 term the Court has accepted another takings case that potentially raises the damage remedy issue. See MacDonald v. County of Yolo, 106 S. Ct. 244 (1985) (probable jurisdiction noted).


435. Professor Alexander has recently argued forcefully for the rejection of the tradi-
To appreciate and accommodate the precise nature of this conflict necessitates a candid formulation of the competing values at stake. At the outset this formulation will require determination of the relative weights to give to different aspects of environmental quality, ranging from purely aesthetic concerns to severe public health hazards. Nothing justifies the failure to recognize that these objectives vary in social importance and thus deserve varying weight in the judicial balance.

In addition, a formulation of competing values will require assessing the weightiness appropriate for different aspects of private expectations, judicial analysis for determining whether a legally protected property interest exists. See Alexander, supra note 239, at 1597-98. As he sees it, that test essentially inquires whether the interest in question is in any way “subordinate” to a preexisting governmental interest. See id. at 1575, 1585-87. Alexander argues that the subordination test makes little sense in the context of new property rights when the government is the source of property in the first instance. In that case, the analysis would deny any meaningful protection to individual security and thus ignores an essential purpose of private property. Id. at 1597-98. When the government is a player, Alexander argues, the concept of property must be approached on a more teleological basis. See id. at 1599.

Commentators have already signaled out the federal navigation servitude, a close relative of the trust doctrine. See supra text accompanying notes 23-44. The servitude depends on a fictional reservation of a prior superior interest, rather than on an honest and candid assessment of the competing values at stake. See Costinis, Presumptive and Per Se Takings: A Decisional Model for the Taking Issue, 58 N.Y.U. L. REV. 465, 525 (1983); see also Alexander, supra note 239, at 1587-88 & n.127, 1594-98. A recent Tenth Circuit ruling reflects similar concern about the navigation servitude. See Cherokee Nation v. United States, No. 84-2353, slip op. at 11 (10th Cir. Jan. 1, 1986) (“When the [navigation servitude] affects private ownership not connected to navigational use, the court must balance the public and private interests to decide whether just compensation is due.”).

436. The need for explicit consideration of the underlying values and competing social policies at stake, especially in confrontations between assertions of governmental power and private property rights, has been a relentless theme among the commentators and its demand is arising in the environmental arena. See Alexander, supra note 239, at 1552, 1592; Oakes, supra note 224, at 626; Reich, supra note 283, at 787; Rose, supra note 245, at 598; Costinis, supra note 435, at 496, 499-501, 524-25; Yellin, Science, Technology, and Administrative Government: Institutional Designs for Environmental Decisionmaking, 92 YALE L.J. 1300, 1333 (1983) (must make “commitment throughout our educational system and government to exposing the real complexities of [technological] decisions” facing the nation); see also Dewey, Logical Method and Law, 10 CORNELL L.Q. 17, 26 (1924) (“Failure to recognize that general legal rules and principles ... [need] to be constantly tested by the way in which they work out in . . . concrete situations, explains the otherwise paradoxical fact that the slogans of liberalism of one period often become the bulwarks of reaction in a subsequent era.”); Donahue, supra note 211, at 58 (future of property depends on resolution of tension between individualism and communalism); Frug, supra note 229, at 1088 (failure of liberalism to discern which aspects of municipal authority truly intringed upon individual freedoms led to excessive stripping of legitimate and necessary role of municipalities); Philbrick, supra note 211, at 693, 730-31; cf. Kelman, Trashing, 36 STAN. L. REV. 293, 321-26 (1984).

437. Although Justice Brennan rejects a takings test based on a noxious use analysis, see Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 133 n.30 (1978), clearly at bottom, whether the purpose of a police power measure challenged as an unconstitutional taking is to promote aesthetic concerns or to prevent a threat to public health and safety, the analysis must affect the judicial outcome. See Costinis, supra note 435, at 496 n.126. Justice Brennan’s desire not to endorse such an analysis in Penn Central, a case
ranging from those rooted in individual security and personality to those more related to economic power.\footnote{438} In today's industrialized society, property increasingly is accumulated as a source of power and often extends to substantial control over the means of production, the proper utilization of which is essential to all society. The personal liberty implications of regulating the exercise of this latter type of property right are less clear or at least less compelling.\footnote{439} Accordingly, the interest in property as a source of power should be entitled to less weight in the judicial analysis.\footnote{440} The Supreme Court's refusal to place significant weight on loss of profits involving historic preservation, is understandable, but does not detract from the logic of differentiation. Certainly, the Court already performs just such a differentiation in other areas of constitutional adjudication, most prominently in its identification of "compelling" state interests as opposed to merely "legitimate" governmental objectives. \textit{See L. Tribe, supra note 179, at 580-84 (free speech); id. at 891-92 ("rights of personhood"); id. at 1002-03 (equal protection). Of particular pertinence, the Court has already begun to differentiate between different sorts of state interests in natural resources in its recent commerce clause cases, see Sporhase v. Nebraska \textit{ex rel.} Douglas, 458 U.S. 941, 956 (1982), placing conservation, and health and safety highest, \textit{see} Hellerstein, \textit{Hughes v. Oklahoma: The Court, the Commerce Clause, and State Control of Natural Resources}, 1979 \textit{Sup. Ct. Rev.} 51, 60; Tarlock, \textit{So Its Not "Ours"—Why Can't We Still Keep It? A First Look at Sporhase v. Nebraska}, 18 \textit{Land \\& Water L. Rev.} 137, 162-63 (1983). Justice Brennan, moreover, appears willing to endorse this approach to consider environmental objectives in the first amendment context when he places less weight on assertions of aesthetic concerns than on other environmental concerns, such as health and safety. \textit{See} Members of the City Council v. Taxpayers for Vincent, 104 S. Ct. 2118, 2138 \\& n.3 (1984) (Brennan, J., dissenting); Metromedia, \textit{Inc. v. City of San Diego}, 453 U.S. 490, 528-30 (1981) (Brennan, J., concurring). So too, to determine the validity under the contract clause of state police power regulation that substantially impairs contractual expectations, the Court inquires whether the regulation furthers a "significant and legitimate public purpose . . . such as the remedying of a broad and general social or economic problem." \textit{See} Energy Reserves Group v. Kansas Power \\& Light Co., 459 U.S. 400, 411-12 (1983). Finally, Justice Rehnquist, joined by two other members of the Court dissenting in \textit{Penn Central}, has already endorsed the concept in the context of a takings challenge, going so far as to assert that police power measures that forbid uses of property "dangerous to the safety, health, or welfare of others" cannot be deemed unconstitutional takings, regardless of economic impact. \textit{See} 438 U.S. at 145 (Rehnquist, J., dissenting). At least implicitly the Court takes into account such considerations in its takings analysis when it considers both the nature of the governmental action challenged and the reasonableness of the investments being frustrated by that action. For example, in Ruckelshaus v. Monsanto Co., 104 S. Ct. 2862 (1984), the Court dismissed a takings challenge primarily on the grounds that any investment-backed expectations Monsanto had were unreasonable. \textit{See id.} at 2875. The gravamen of the Court's ruling was that Monsanto should have known that its activities in the pesticide area would be subject to increasing governmental regulation given the tremendous public interest in such oversight.

\footnote{438} In archaic law and in the writings of certain philosophers, most notably Kant, Hegel, and Mill, property rights represent an important extension of individual personality and their sanctity a matter of morality and natural rights. \textit{See L. Becker, supra note 225, at 62-64, 102-03; Radin, supra note 424, at 1002-13; Rodgers, Bringing People Back: Toward A Comprehensive Theory of Taking in Natural Resources Law, 10 \textit{Ecology L.Q.} 205, 208-11 (1982); Smith, supra note 225, at 35; Soper, supra note 225, at 64.}

\footnote{439} \textit{See} Cohen, supra note 238, at 12-14; Donahue, supra note 211, at 57; Philbrick, supra note 211, at 696-97, 726; Reich, supra note 283, at 771-74; \textit{see also} L. Becker, supra note 225, at 40.

\footnote{440} \textit{See} Costonis, supra note 435, at 499-501, 518 \\& n.214.
occasioned by a governmental restriction may reflect these considerations.\textsuperscript{441} Most clearly reflecting these concerns, however, is the Court’s recent decision to uphold a state law that utilized eminent domain power to break up monopolistic land holdings in Hawaii. In \textit{Hawaii Housing Authority v. Midkiff}\textsuperscript{442} the Court agreed that it was entirely proper for a state to address the “perceived social and economic evils of a land oligopoly” by redistributing fees simple in the land.\textsuperscript{443} According to the Court, it was a “rational approach to ... correcting market failure.”\textsuperscript{444}

Finally, the coherent development of natural resources law will require explicit recognition of the special relationship of the natural and physical environment to man. In particular, the law must reflect the fundamental importance of natural resources in their virgin state,\textsuperscript{445} the physical characteristics of the resources,\textsuperscript{446} and the physical characteristics of the earth’s inhabitants.\textsuperscript{447} To be sure, this is no small task nor one likely to be achieved soon. Indeed, when one adds to these three basic factors the changing nature of human values, knowledge, technology, and

\begin{itemize}
\item \textsuperscript{441} See supra note 261.
\item \textsuperscript{442} 104 S. Ct. 2321 (1984).
\item \textsuperscript{443} See id. at 2330.
\item \textsuperscript{444} See id.; see also United States v. Locke, 105 S. Ct. 1785. 1798 (1985) (“[V]ested economic rights are held subject to the Government’s substantial power . . . to redistribute the benefits and burdens of economic life.”); Comment, \textit{The Sherman Act and Land: The Interstate Commerce Requirement}, 3 COLUM. J. ENVTL. L. 306, 312-13 (1977).
\item \textsuperscript{445} Simply put, our natural resources and physical environment are the source of all human sustenance and wealth. They provide the source of energy, materials, and nutrients upon which all current and future life on the planet depend, including human beings. See Wiel, supra note 280, at 456-57.
\item \textsuperscript{446} “The principles of the decalogue may be applied to the conduct of men in every country and clime, but rules respecting tenure of property must yield to the physical laws of nature . . . .” Yunker v. Nichols, 1 Colo. 551, 553 (1872). See generally \textit{Outer Space}, supra note 297, at 547-48, 563, 567, 569, 572, 570-79; Wiel, supra note 280, at 431, 439, 456; \textit{Note, Thaw in International Law? Rights in Antarctica Under the Law of Common Spaces}, 87 YALE L.J. 804, 846-47 (1978). Our natural resources may be necessary to satisfy certain fundamental needs, but their own physical characteristics define at the outset how we may in fact utilize them to satisfy those needs. Natural resources theoretically may break down into a chemist’s periodic table of elements, but in the natural environment those elements find expression in myriad physical forms exhibiting infinite physical characteristics. Moreover, the resources are arranged in a complex ecological web in which the continued maintenance of some are highly dependent upon the presence or absence of another.
\item \textsuperscript{447} The physical characteristics of human life, in particular its fragility, in turn also define the relationship of man to the natural environment. While \textit{homo sapiens} are a self-propagating species, each individual is mortal and thus has limited time horizons. Individual mortality and health generally, moreover, do not depend solely on internal limits but depend principally on the presence or absence of external environmental factors, such as temperature, pressure, or certain chemical compounds that interact with our biologic functions. Finally, existing and future generations are not discrete, nonconcurrent groups that can be isolated by clear temporal boundaries, like yearly corn harvests. See Steiner, supra note 399, at 253; see also L. Becker, supra note 225, at 72. They represent continuous, concurrent, and overlapping groups.
\end{itemize}
social demographics, and the inherent complexities of our legal system, it is no wonder that the assignment of private property rights in natural resources has proved to be so intractable a task. Whether pursuing the goal of allocative efficiency through market mechanisms or of individual integrity through secure territory, the notion of private property runs into overwhelming obstacles in the context of natural resources. The fundamental importance of the resources and their own physical characteristics coupled with those of humans dictates the potential enormity of the externalities associated with the exercise of individual rights in the resources. Modern technology and the erosion of traditional family values exacerbate the problem—modern technology by increasing the potential impact of individual decisions both geographically and temporally, and traditional family values by decreasing ties between existing and future generations.448

Flexibility is becoming an essential ingredient in the makeup of laws governing private and public rights in natural resources to respond to these varied physical and sociological demands. This is especially true given the rapid pace at which new knowledge is nowadays acquired and the high costs at stake in preventing needless environmental degradation. Granted, flexibility in legal rules is often at the expense of stability that is important to individual security. So too, flexible laws are susceptible to accusations that they are vague, and thus they suffer from infirmities akin to those of the public trust doctrine. The question, though, becomes who should and how to accommodate these competing concerns.449 Who, in other words, is the appropriate manager of a given resource? It is here, perhaps most of all, that we find the public trust doctrine’s greatest flaws—a lack of candor and a lack of an established institutional framework for lawmaking.

First, like other already abandoned property-based legal fictions,450 the trust doctrine finds its strength and tenacity in its resistance of candor

448. Still, rather than simply justifying a total denial of private property rights in natural resources, the stated premises and additional considerations serve a much less extreme and more constructive task. They justify a strong role for the government in resolving the sorts of conflicts that, as these premises indicate, inevitably arise with vital natural resources. In addition, they support the threshold assumption that the aim of the government will be to resolve those conflicts in a manner that minimizes needless degradation of natural resources because only in that manner will the government be acting to minimize future conflicts. The significance of these premises, accordingly, is twofold. First, they suggest a framework for evaluating the validity of governmental restrictions that limit the exercise of private rights in resources. Second, they reflect the underlying rationale for heightened judicial scrutiny of governmental measures that themselves threaten the natural environment with needless degradation.

449. C.f. Epstein, Notice and Freedom of Contract in the Law of Servitudes, 55 S. Cal. L. Rev. 1353, 1366 (1982) ("[G]iven the pervasive ignorance over the trade-off between the virtues of flexibility and certainty, and between the vices of indefiniteness and rigidity, there is simply no persuasive reason to embrace one extreme to the exclusion of the other.").

and its refusal to compromise its principles. In this way, promoting public trust analysis runs counter to the compelling need for self-examination, candor, and flexibility in the reshaping of natural resources laws. Second, unlike the emerging scheme of new property rights in natural resources that is developing largely at the administrative level (generally instigated by the legislature and overseen by the courts), the public trust doctrine provides no ready framework for the assignment of lawmaking authority. The legal doctrine is inherently suspicious of legislative and administrative lawmaking regarding natural resources; yet, at bottom, it offers nothing much in its place. By addressing none of the critical tasks currently facing the development of natural resources law, and indeed potentially resisting those efforts, the public trust doctrine threatens to fuel the growing conflict in liberal ideology and impede the fashioning of a unified system of law.

B. Toward a Strategic Retreat from the Public Trust Doctrine

Finally, even apart from its failure to provide needed candor, and its inflexibility in the face of changing values and knowledge, reliance on the doctrine should be abandoned because it offers too tenuous a basis for protecting important environmental protection and resource conservation objectives. Three separate factors, discussed in turn below, favor such a strategic retreat. First, trust values will never adequately reflect modern environmental concerns. Second, the doctrine unjustifiably relies on the judiciary to further its environmental goals and, consequently, ultimately depends on a proenvironment judicial bias that is not enduring. Third, recent judicial decisions, in particular those of the Supreme Court, make it clear that any special legal status the trust rationale has enjoyed in the past is waning.

1. The Failure of the Trust to Reflect Modern Environmental Concerns

The strength of the public trust doctrine necessarily lies in its origins; navigable waters and submerged lands are the focus of the doctrine, and the basic trust interests in navigation, commerce, and fishing are the object of its guarantee of public access. Commentators and judges alike have made efforts to "liberate," "expand," and "modify" the doctrine's scope, yet its basic focus remains relatively unchanged. Courts still repeatedly return to the doctrine's historical function to determine its pres-

451. Judge Oakes recently stressed the importance of identifying value judgments in judicial analyses in the property rights context and in particular the great need to avoid the "tyranny of labels." See Oakes, supra note 224, at 626. The public trust doctrine certainly epitomizes such an uncontrollable label. Indeed, that the doctrine has been invoked historically to promote developmental activities as much as environmental quality objectives suggests the danger of environmentalists embracing the public trust label.
452. See Sax, supra note 10, at 192-93; Stevens, supra note 10, at 221-23.
ent role.\textsuperscript{453} When the doctrine is expanded, more often than not the expansions require tortured constructions of the present rather than repudiations of the doctrine's past.\textsuperscript{454}

Achievement of modern environmental protection and resource conservation goals, moreover, ultimately depends not so much on an "expansion" of public trust values as it may require a repudiation of the doctrine's focus and traditional values. Today, societal concerns with environmental protection and resource conservation extend beyond navigable waters to include far-ranging elements of our ecosystem, such as the ozone layer, unheard of in Roman times. Our economy no longer depends so exclusively on water navigation.\textsuperscript{455} Our economy "navigates" by air, by motor vehicle, and, indeed, by way of the electromagnetic spectrum. So too, the promotion of commerce, a traditional public trust doctrine objective,\textsuperscript{456} is hardly a focus of resource protection values. Indeed, more often than not it serves as a counterweight to those values in the formulation of public policy because of its pro-development bias. Finally, public access, undoubtedly the single most important public trust guarantee,\textsuperscript{457} is often at odds with modern environmental conservation and protection laws.\textsuperscript{458} Increasingly, those laws must restrict access to protect resources.\textsuperscript{459} One telling sign of a legal fiction's demise is that the words they represent change meaning to such an extent that, as with the trust doctrine currently, the fiction's application and substance are simply a matter of individual discretion.\textsuperscript{460}

In short, the way we and our laws look upon natural environment has changed fundamentally since the development of the public trust doctrine. The legal categories and social values upon which the doctrine is

\textsuperscript{454} See, e.g., Morse v. Oregon Div. of State Lands, 285 Or. 197, 200-03, 590 P.2d 709, 711-12 (1979) (en banc); see also Sax, supra note 10, at 185-86.
\textsuperscript{455} Today, moreover, the governmental interest in waterways is not so much navigability as the critical ecological role of the specific aquatic resource. See Zabel v. Tabb, 430 F.2d 199, 201-03 (5th Cir. 1970), cert. denied, 401 U.S. 910 (1971). Still, the extent of sovereign authority over the resource continues to focus on old categories of navigability, leading to costly, time-consuming, and essentially irrelevant litigation over the proper application of those categories. Rosen, supra note 16, at 561-62 & n.6. Clearly it makes far more sense for the extent of governmental authority to turn on the true focus of public concern.
\textsuperscript{456} See supra text accompanying note 84.
\textsuperscript{457} See supra text accompanying notes 138-43.
\textsuperscript{459} For example, the ironic consequence of increased public appreciation of wilderness areas is greater need to restrict public access to those areas. See R. Nash, WILDERNESS AND THE AMERICAN MIND 317-41 (3d ed. 1982).
\textsuperscript{460} L. Fuller, supra note 164, at 145.
based have little to do with modern concern. Ultimately, the public trust
dctrine does not need to be "liberated," so much as our natural resources
laws, including the trust doctrine, must be freed from the past.

2. Undue Reliance on Proenvironment Judicial Bias

A second long-term weakness that counsels abandonment of the public
trust doctrine is its implicit assumption that the judiciary is in the best
position to safeguard environmental concerns and that it will in fact do
so. For this reason, critics typically complain that the public trust
docline is antidemocratic and a historical "sham" or "mask" for
judicial usurpation of legislative and executive branch power. Even more
fundamentally, however, good reason suggests questioning the validity
of the assumption that the judiciary will lean toward environmental pro­
tection, apart from philosophical concerns about the proper workings of
a democracy.

First, although it is true that judicial concern is naturally triggered
by the typically unrepresented environmental interests in the political pro­
cess, the courts also have demonstrated considerable concern with govern­
mental impingements on individual security interests. Environmental
concerns are not guaranteed a victory in the courts should a collision with
individual security interests occur.

Second, the favorable bias toward environmental protection, exhibited
by the courts in the 1970's, might not continue. In the past, courts have
used the public trust doctrine to support developmental activities they
favored. The vagueness of the doctrine's mandate lends to the risk that
the doctrine could still further those interests. Certainly, environmental
interests deserve and require a firmer and more secure position in our laws.

Finally, regardless of judicial bias or desire, courts may lack suffi­
cient competence in the environmental arena. Questions arising in the
environmental and natural resources law field can be so inordinately com­
plex and the competing societal concerns at stake so fundamental that at
some level judicial second-guessing of administrative agency action may
not be particularly productive. Better solutions, suggested by critics of

461. Sax, supra note 3, at 566; see also Sax, supra note 10, at 193.
462. See Deveny, supra note 10, at 13-14; Comment, supra note 10, at 457; see also Co­
quillette, supra note 10, at 799 (judicial balancing of utilities in tort cases provides courts
with too much discretion to evade democratic processes); Walston, supra note 272, at 81.
463. See supra text accompanying notes 335-56.
464. See supra text accompanying note 433.
465. See supra notes 250-56 and accompanying text. Notably, in one of his earliest
writings, Justice Brandeis criticized the Massachusetts Supreme Judicial Court for this
type of ruling, characterizing it as "judicial legislation . . . of doubtful expediency." See
Warren & Brandeis, supra note 250, at 211.
466. See Stewart, supra note 351, at 1586 (courts "ill-equipped" to discern appropriate
allocation or distribution of natural resources).
the judicial function in environmental matters, may reside in new modes of administrative decisionmaking that are less dependent on effective judicial oversight of agency action to ensure full representation of competing considerations.\textsuperscript{467} One possibility suggested is to establish surrogate representatives of varying interests within regulatory agencies.\textsuperscript{468} Whatever the merits of these proposals, their relevance to the wisdom of the public trust doctrine is clear. They stand for the proposition that the solutions to the sorts of difficult problems society faces in environmental areas do not lie with the judiciary, while the trust doctrine ultimately depends on the contrary thesis.

3. Contrary Direction of Recent Supreme Court Cases

Finally, in recent cases, the Supreme Court has severely undercut the public trust doctrine rationale. In particular, the Court has plainly forecast its view that the public trust doctrine expresses no more than the sovereign's special interest in an aspect of its general police power authority.\textsuperscript{469} According to the Court, claims of sovereign ownership are but legal fictions that offer no special immunity to challenges of transgressing constitutional limits. The Court's recent decisions in the context of commerce,\textsuperscript{470}

\textsuperscript{467} See Yellin, supra note 436, at 1302-05, 1325. For a listing of cases in which courts made fundamental scientific errors, see id. at 1325 n.150.

\textsuperscript{468} Id. at 1328. Of course, this is not a new idea. Professor Stewart discussed several methods of furthering "interest representation" in administrative lawmaking in his classic article on the reformation of administrative law. See Stewart, supra note 305, at 1790-1802. Recently, however, some efforts have been made in this direction. On a trial basis, the EPA has begun a new method of rulemaking based in large part on a process of "regulatory negotiation" in which the agency invites potentially affected parties to come together to develop a consensus rule. The agency is not bound to accept the rule, but the proposal certainly carries weight as part of the administrative record of the agency decision. See generally Anderson, Negotiation and Informal Agency Action—The Case of Superfund, 1985 Duke L.J. 261, 343-44 & nn.321-22.

\textsuperscript{469} In a revealing dissent, Justice Brennan recently paused to characterize the Illinois Central decision, describing it as standing merely for the basic proposition that "all private rights of property, even if acquired through contract with the State, are subordinated to reasonable exercises of the States' lawmaking powers in the areas of .. environmental protection." See United States Trust Co. v. New Jersey, 431 U.S. 1, 50 (1977) (Brennan, J., dissenting).

\textsuperscript{470} See Sporhase v. Nebraska ex rel. Douglas, 458 U.S. 941, 951 (1982) (sovereign ownership of water); see also Hughes v. Oklahoma, 441 U.S. 322, 334-35 (1979) (sovereign ownership of minnows). In both cases, the Court rejected the states' arguments that their laws were exempt from the negative implications of the commerce clause because they owned the natural resources being regulated in their sovereign capacity. The Court described their ownership claims as legal fictions and characterized the state power in question as an exercise of police power and the ownership claim as but representing the special state interests in the resource. See Sporhase, 458 U.S. at 950-52; Hughes, 441 U.S. at 333-38. In Hughes, the Court overruled Geer v. Connecticut, 161 U.S. 519 (1896), in which the Court had previously exempted a state wildlife law from commerce clause strictures on ownership grounds. Notably, the Geer decision, a contemporary of Illinois Central, had described the state power in terms of the public trust doctrine and had alluded to prin-
supremacy,471 and takings clause challenges472 are all consistent in this regard. In a 1984 ruling, moreover, the public litigants' decision to rest their case on a public trust property interest rationale led to their eventual undoing in the Supreme Court as the Court looked in vain for some actual evidence of a prior reservation of a real property interest.473

In addition, the Court's recent case law is inconsistent with the basic trust doctrine principle that courts should promote environmental conservation by narrowly reading the requirement that legislative enactments must promote a "public purpose."474 The clear trend in the Court's opinions is to provide states with the broadest leeway to determine what constitutes permissible public purposes.475 That the trust doctrine is ultimately a matter of state and not federal law, moreover, does not alter the import

471. See California v. United States, 438 U.S. 645, 672-78 (1978). While the State of California prevailed in this case, the Court did not indicate that the state powers at issue, involving the control over state waters, amounted to anything more than the normal exercise of state police powers. See generally Ivanhoe Irrigation Dist. v. McCracken, 357 U.S. 275 (1958); Trelease, Government Ownership, supra note 422. The California Supreme Court has held that the public trust doctrine applies to navigable waters. Natural Audubon Soc'y v. Superior Court, 33 Cal. 3d 419, 437, 658 P.2d 709, 721, 189 Cal. Rptr. 346, 357 (1983). Also, in Block v. North Dakota, 461 U.S. 273 (1983), the United States Supreme Court rejected a state's argument that its title to sovereign trust lands was entitled to special protection in a quiet title action brought by the United States. See id. at 287. Justice O'Connor, dissenting, appeared willing to attach weight to the trust nature of the sovereign ownership of the lands. See id. at 294-96 (O'Connor, J., dissenting). The Eighth Circuit and the district court, both reversed by the Court, each had based its contrary ruling on the public trust doctrine. See North Dakota ex rel. Bd. of Univ. & School Lands v. Andrus, 506 F.Supp. 619, 624-25 (D.N.D. 1981), aff'd, 671 F.2d 271 (8th Cir. 1982). Finally, just as the Supreme Court has held that the supremacy clause does not allow the federal government to avoid the strictures of the takings guarantee by claiming it is just "pre-empting" state property law, Ruckelshaus v. Monsanto Co., 104 S. Ct. 2862, 2878 (1984), state law cannot avoid the supremacy clause simply by claiming that its power is a matter of property law and not state police power.

472. See Kaiser Aetna v. United States, 444 U.S. 164, 172 (1979). In Kaiser Aetna the Supreme Court rejected the United States' argument that its requirement that an otherwise private pond be open for public access was immune from takings challenge because the requirement merely represented an exercise of the sovereign's navigation servitude. The Court described the federal navigation servitude, a historical companion of the public trust doctrine, see supra text accompanying notes 23-44, as simply an expression of the government's "important public interest in the flow of [navigable] interstate waters." See 444 U.S. at 175. In this manner, the Court treated the governmental interest not as an absolute property right, but simply as a consideration deserving of great weight in the judicial balance. The interest, however, was not enough under the facts of that particular case to overcome the equities weighing in favor of the private party.


474. See supra text accompanying notes 116-28.

475. See supra text accompanying notes 233-35.
of the Court's rulings. Federal constitutional restrictions, of course, apply to the doctrine and, in considering the merits of state governmental actions under the doctrine, state courts can be expected to look to recent Supreme Court cases for guidance. Indeed, the steady infusion of the "lodestar" public trust decision, Illinois Central Railroad, into state laws ably illustrates the process. Consequently, it makes little strategic sense for environmentalists to continue to base important resource conservation and environmental protection objectives on a legal doctrine that promises to be soon undermined by the High Court. This is especially true when traditional legal doctrine offers an alternative, more viable, and certain basis of legal authority that does not depend on an increasingly shaky legal fiction.476

CONCLUSION

Lifting the patch we may trace out the patterns of tension that tore the [law's] fabric [of theory] and at the same time discern elements in the fabric itself that were previously obscured from view. In all this we may gain a new insight into the problems involved in subjecting the recalcitrant realities of human life to the constraints of a legal order striving toward unity and systematic structure.477

Over the last fifteen years, the public trust doctrine has been the object of a remarkable revival in natural resources law. At the time of its "Renaissance" it served to highlight important societal values not then in focus. Accelerating changes in the law suggest that it is now time to bring that revival to a close—to lift the public trust doctrine "patch" from the emerging fabric of modern natural resources law. Operation of the doctrine inevitably depends on the judicial application of labels that obscure the true factors behind the judicial decision. Moreover, those legal categories upon which the doctrine inexorably relies may have been meaningful once, but they have become arbitrary and wooden with age. Natural resources law has for too long been inflicted with a host of such false legal categorizations, inhibiting its developments in times of new information and changing social values. Indeed, the recent history of natural resources law is most prominently marked by a continuous struggle to be freed of historical shackles so that natural resources law can properly be fused with and into modern notions of tort and property law.

Simply put, the public trust doctrine, even if aimed at promoting needed resource conservation and environmental protection goals, is a step in the wrong direction. The doctrine amounts to a romantic step

476. The historical underpinnings upon which the public trust doctrine is based, especially Roman law, have in recent years come under sharp attack by commentators, thus further weakening the long-term viability of the doctrine. See supra note 10.

477. L. Fuller, supra note 164, at viii.
backward toward a bygone era at a time when we face modern problems that demand candid and honest debate on the merits, including consideration of current social values and the latest scientific information. The complex and pressing resource allocation and environmental protection issues we currently face will continue to tax severely the most concerted societal efforts and the best legal and scientific minds. Dramatic shifts in legal rules, primarily in traditional notions of private property, will continue to be necessary, challenging the patience and understanding of the public, to whom the law must ultimately justify its legitimacy. Although perhaps unfortunate, short of a major redirection of this nation’s social and economic infrastructure, little, if any, room is left in these tasks ahead for the mythopoeism of the public trust doctrine.

478. Theoretically, the need for trust-like property law fictions could return in the future should, as suggested recently by Professors Piore & Sabel, a second industrial divide occur in the United States, and an economy and society based on “mass production” and “market liberalism” be displaced by “flexible specialization” and “yeoman democracy,” in which notions of community and common properties, once prevalent, might return. M. PIORE & C. SABEL, THE SECOND INDUSTRIAL DIVIDE 305 (1984).