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Natural Resource Damages: Trusting the Trustees

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Whether law should intervene to prevent or to compensate for harms documented by scientific evidence is clearly a value-laden question of law and policy. What we decide to call pollutants . . . may be partly determined by what harms we think are important, which harms we think we can control, and which harms we wish to do something about. . . . From a policy point of view, we should be interested in carefully weighing the costs and benefits of any legal intervention to protect the environment as well as the distribution of those costs and benefits . . . . [Or] [p]erhaps the issue is not one of rights or costs and benefits but one concerning the kind of life we want to live.¹

Injury to the environment often remains uncompensated and un-restored after expenditures are made to clean up sites polluted by a hazardous substance release or an oil spill. Yet, damages for harm to public natural resources not addressed by response and remedial actions following such incidents are recoverable in actions brought by federal and state trustees against responsible parties. The 1980 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)² codifies the cause of action. The stat-

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ute includes a provision which legislatively "created the first federal and state resources trustees and empowered them to seek damages for injury caused by toxic wastes to public natural resources." Common law recognized state authority over public resources under constructs such as the public trust doctrine and parents patriae. However, until the 1970s, public natural resources lacked the kind of legal protection available for private property. The 1977 amendments to the Clean Water Act (CWA) authorize federal and state governments to recover "costs or expenses incurred . . . in the restoration of natural resources damaged or destroyed as a result of a discharge of oil or a hazardous substance." CERCLA extends protection to additional environments. Public trustees, by statute, now have both a duty and the power to restore public resources damaged by hazardous substances.

CERCLA mandated the creation of assessment rules for public trustees to follow in a CERCLA or CWA claim for natural resource damages remaining after response and cleanup remediation. The Department of Interior (DOI) was charged with the task of devising the standard procedures. Trustee assessments conducted under the rules have the "force and effect of a rebuttable presumption." The regulations issued by DOI in 1986 and 1987 filled a void in the controversial area of damage assessments of public natural resources. However, the choice of valuation methodology affects the recovery amount, and therefore the ability to actually restore or replace damaged public resources. Rather than resolving resource valuation conflicts, DOI's rules instead served to focus the controversies. The rules were quickly challenged as inadequate to achieve CERCLA's intent, that is, full compensation for "injury to, destruction of, or loss of, natural resources." In July 1989 a federal appeals court ordered DOI to rewrite the rules to conform to the legislative objective.

CERCLA is retrospective, unlike prior environmental legislation such as CWA. "Natural resources" are broadly defined under CER-
CLA. Moreover, CERCLA relaxes liability limitations, standards for establishing causation, and common law evidentiary barriers, while expanding the pool of potential responsible parties (PRP’s) who may be held liable for such damages.¹¹ Virtually anyone associated with the hazardous substance, its transport or disposal, is potentially liable for both clean-up costs and natural resource damages caused by the release.¹²

The PRP definition includes state and local governments and explicitly extends to them the same type and degree of liability it extends to any other potentially liable person.¹³ Public trustee liability is likely to be upheld in a natural resource damages action. A recent United States Supreme Court decision¹⁴ found that Congress intended CERCLA to override a state’s immunity from suits brought by private parties seeking contribution for cleanup costs. The court gave no indication that the same reasoning would not extend beyond cleanup costs to the natural resource damages provisions of the statute as well. Consequently, a state could find itself the investigator and damage assessor of the public trust and, simultaneously, a violator liable for portions of the recovery required to compensate the public for injury to those natural resources.

This Comment reviews the scope of actions for damages to public natural resources caused by hazardous substances; the need for realistic valuation of natural resources to accomplish restoration following injury; the inherent difficulties in setting assessment standards; and the deficiencies in DOI’s initial damage assessment rules. The mandate that public trustees pursue compensation for natural resource damages also raises questions about the nature of the public trust, trustee duties, and trustee liabilities, as well as concerns about compensation sources, conflicts of interest, and intervention rights of the public “beneficiaries” of the public natural resources trust.

I. Assertion of Natural Resources Damages

A. Scope of Recovery

1. Hazardous Substances and Damages Recovery Authority

CERCLA specifically designates hundreds of chemicals and other substances as hazardous. Each may give rise to claims under the Act

¹² Id. § 9607(a).
¹³ Id. § 9601(21).
for natural resource damages. Although CERCLA excludes petroleum products from its list of hazardous substances, the statute explicitly incorporates hazardous substances that may be designated under the CWA. CWA addresses oil and other hazardous substance releases into navigable waters, separately defining each category, but authorizing broad damage recoveries for damages from either release source. The authority to pursue monetary recoveries in order to restore or replace damaged natural resources is thus explicit in both CWA and CERCLA.

CERCLA prescribes that the damage assessment rules authorized by the Act apply to recoveries under either CWA or CERCLA. Congress thus explicitly manifested its intent that compensation pursued by public trustees be for the "injury to, destruction of, or loss of natural resources resulting from a release of oil or a hazardous substance," despite CERCLA's apparent exclusion of oil as a hazardous substance for other purposes within its scope. The assessment rules as issued are also explicit in this regard. Congress intended to merge recovery procedures following incidents covered by either Act into a uniform set of damage assessment rules.

15. 42 U.S.C.A. § 9601(14) (West Supp. 1989). "The definition of 'hazardous substance' is broadly defined by reference to chemicals designated under other environmental statutes. Approximately 700 chemicals are thus specifically designated as hazardous substances, and chemicals not listed which exhibit specified hazardous characteristics also qualify as hazardous substances." Breen, Natural Resources Recovery by Federal Agencies—A Roadmap to Avoid Losing Causes of Action, 13 Envtl. L. Rep. 10,324, 10,324-25 n.10 (1983) [hereinafter Breen, Roadmap].

16. "The term 'hazardous substance' . . . does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph." 42 U.S.C.A. § 9601(14) (emphasis added). The "(A)" alluded to is an explicit incorporation of 33 U.S.C. § 1321(b)(2)(A) of the CWA into the definition.


18. Id. § 1321(f)(4)&(5) (i.e., "any costs or expenses incurred by the Federal Government or any State government in the restoration or replacement of natural resources damaged or destroyed as a result of a discharge of oil or hazardous substances . . .")


20. "[CERCLA] . . . and . . . [CWA] . . . provide that natural resource trustees may assess damages to natural resources resulting from a discharge of oil or a release of hazardous substance covered under CERCLA or the CWA and may seek to recover those damages." Regulations Respecting Assessment of Damages to Natural Resources, 43 C.F.R. § 11.10 (1987). DOI rules promulgated pursuant to the requirements of CERCLA, 42 U.S.C.A. § 9651(e)(2) (1983 & West Supp. 1989).

21. Congressional authorization for recoveries of damages "beyond the mere removal or remediying of spills" was judicially validated as including those from oil. Ohio v. United States Dept. of Interior, 880 F.2d 439, 432 (D.C. Cir.), reh'g denied, 897 F.2d 1151 (D.C. Cir. 1989) (en banc). CERCLA mandates that the procedures govern actions brought by federal and state trustees under both CERCLA and the CWA. 42 U.S.C.A. § 9607(f)(2) (West Supp. 1989). "Congress conferred on the President (who in turn delegated to Interior) the responsibility for promulgating regulations governing the assessment of damages for natural resource injuries resulting from releases of hazardous substances or oil, for the purposes of CERCLA and the Clean Water Act's § 311(f)(4)-
2. "Natural Resources"

CERCLA defines natural resources as "land, fish, wildlife, biota, air, water... and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States... any State or local government." The expansive definition of the natural world is circumscribed for liability purposes by the requirement of a government connection to the resources ("belonging to, managed by, held in trust by... "). The government connection is cast in fiduciary terms: the government is responsible to the public for stewardship of the natural resources trust. Moreover, the government alone is authorized to bring a cause of action to recover for damages to public resources.

Commentators differ in their assessments of how far the definition of natural resources extends for purposes of damages recovery. Some writers insist that the government connection to the injured resource must be tantamount to ownership control. Others assert that the scope includes any resource regulated by government. Still others (5) oil and hazardous substance natural resource damages provisions. 33 U.S.C. § 1321(f)(4)-(5). Ohio, 880 F.2d at 439.

23. "The President, or the authorized representative of any State, shall act on behalf of the public as trustee of such natural resources to recover for such damages." 42 U.S.C.A. § 9607 (f) (West Supp. 1989) (emphasis added). "[A]ny such claim [for injury to, or destruction or loss of natural resources] may be asserted only by the President, as trustee for natural resources... or by any State for natural resources within the boundary of that State belonging to, managed by, controlled by or appertaining to the State... Id. § 9611(b)(1) (emphasis added). Congress also excluded purely private property from the scope of compensation in the final Superfund (CERCLA) program. Id. § 9607(f).

24. These commentators argue for a narrow construction of the necessary government connection: "[T]he natural resources provisions must be limited to government-owned resources, other resources where the government virtually has outright ownership, or resources where government control amounts essentially to ownership control." Warren & Zackrison, Natural Resources Damages Provisions of CERCLA, 1 NAT. RESOURCES & ENV'T, Fall 1985, at 18, 21. Under this construction, government's control over the resources would have to be "so pervasive or formal as to be tantamount to an ownership interest" before damages recovery could be pursued under the statute. Id.

25. These commentators view the nexus requirement less restrictively and would include: (a) Resources owned by government, (b) resources belonging to the public trust, (c) resources regulated by government for environmental purposes, and (d) "resources that are not directly regulated by a government for purposes of environmental protection but that could constitutionally be regulated." Breen, CERCLA's Natural Resource Damage Provisions: What Do We Know So Far?, 14 ENVTL. L. REP. 10304, 10305 (1984) [hereinafter Breen, What Do We Know?]. The last of these connections has the least nexus to the government and may therefore fall outside the damage recovery scope: "Whether damage to resources in [category (d)] is recoverable will probably have to await judicial interpretation, further legislative elaboration, or at least regulatory defini-
construe the language so broadly as to include all natural resources within a state’s jurisdiction, regardless of public ownership or regulatory connection.26

The DOI interpretation of the requisite government connection to natural resources is unclear. Although DOI used the same language as the statute, comments accompanying its damage assessment rules introduced ambiguity about how narrowly the agency was actually construing the nexus requirement. If the agency intends to restrict recoveries for natural resource damage to only those resources in which a governmental entity holds title, then “it would pose a serious risk of running afoul of CERCLA.”27 DOI is under court order to clarify its interpretation of its own regulations “insofar as they may extend to lands not owned by the government.”28 In the meantime, no bright line test circumscribes the resources that fall within the recovery range.

B. Liability

However the resource scope is construed, damages from the release of hazardous substances for “injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss”29 are a potentially enormous financial liability.30 Unless the parties subject to liability can demonstrate that the specific damages were “formally identified and pre-authorized, 

26. Under this interpretation, the language “within the State or . . . appertaining to the State” expands upon “mere sovereignty” to reach all resources within the government’s jurisdiction. Developments in the Law: Toxic Waste Litigation: Natural Resources Damages, 99 HARV. L. REV. 1565, 1566-67 (1986). The emphasis is thus placed on the natural resources themselves. The assertion is that the distinction between private and public ownership is inconsistent with “CERCLA’s goal of forcing defendants to internalize the social costs of natural resource damage, because all natural resources may provide services to, and be valued by, the public,” although the legal distinction between public and private damages should be retained. Id. at 1567. Supporters of this view also argue that “on its face [the statute] goes beyond mere ownership or control. For example, the word ‘trust’ indicates that this definition should include not only resources owned or possessed by the government, but also resources in the ‘public trust,’ such as navigable waters, wetlands, and parklands” regardless of public control. Id. at 1566 n.12. This construction is probably too broad, as Congress apparently intended to draw some distinction between public and purely private resource holdings by including the government nexus element.


28. Id.

29. 42 U.S.C.A. § 9607(a)(4)(C) (West Supp. 1989). “‘Damages’ means the amount of money sought by the Federal or State agency acting as trustee as compensation for injury, destruction, or loss of natural resources as set forth in section 107(a) or 111(b) of CERCLA.” 42 C.F.R. § 11.14(j) (1987).

30. For example, in United States v. Shell Oil Co., 605 F. Supp. 1064 (D. Colo. 1985), the United States sought up to $1.8 billion for natural resources damages at the Rocky Mountain Arsenal in Colorado.
"[t]he President, or the authorized representative of any State, shall act on behalf of the public as trustee of such natural resources to recover for such damages."31

The parties responsible for response and clean-up costs are also liable for natural resources damages. CERCLA provides few defenses, and makes "virtually everyone connected with the unsafe disposal of hazardous substances . . . liable"32: present and past owners or operators of a vessel or facility from which hazardous substances were released; transporters of such substances; and persons who arranged for disposal, treatment, or transport of such substance.33

"Person" is very broadly defined to include not only individuals and numerous private entities, but also the United States, states, and municipal governments.34 Unless a state or local government involuntarily acquired control or ownership of an offending facility or vessel,35 it is subject to all the liabilities and provisions of the legislation "in the same manner and to the same extent, both procedurally and substantively, as any nongovernmental entity."36 This specifically includes liability under the section relating to natural resource damages.37 The exclusion based on involuntary acquisition of the hazardous substances or offending circumstance does not apply if the governmental entity caused or contributed to the release.38 These


33. Id. § 9607(d)(2). Even in emergency response, costs or damages may still be assessable to State or local government if they occurred as a result of gross negligence or intentional misconduct by the State or local government.

34. Id. § 9601(21).

35. Sources of involuntary acquisitions include bankruptcy, tax delinquency, abandonment or similar circumstances associated with the government’s function as sovereign. Id. § 9601(20d).

36. Id. § 9601(20d).

37. Id.

38. Id.
stipulations suggest that conflicting duties to the public could confront the trustees with some frequency. The very government acting under an imperative to recover damages on behalf of the public could find itself simultaneously obligated to apportion liability to itself.

Although CERCLA does not expressly mention either strict or joint and several liability, courts have inferred both from the Act’s legislative history. The legislation was intended to break with traditional common law insofar as the latter inhibits recoveries. Larger awards are possible due to CERCLA’s (and CWA’s) restoration emphasis and to the enactment of “provisions that impose liability beyond that required by common law and remove barriers to liability that would conventionally be available.” Congress conferred authority on the court to resolve contribution claims and to allocate response costs among liable parties “using such equitable factors as the court determines are appropriate.”

One commentator identified five distinctions separating the application of strict liability under a statute like CERCLA and under the common law. Anderson, supra note 3, at 47-31. (1) The statute specifies what wastes are hazardous and provides no excuses based on social utility for responsible parties to use as defenses. Congress’ pre-incident balancing of injury against the importance of an activity causing the injury substitutes for traditional judicial discretion over such balancing. (2) In its “preventative and precautionary” standards, CERCLA dispenses with plaintiff’s common-law burden of proving “injury or irreparable harm of a substantial nature.” (3) CERCLA requires only that the PRP be “in the class of persons identified by the statute” and that the PRP’s waste be present at the site. Anderson construed the proximate cause requirement of the injury to be eliminated by CERCLA. But the statutory language is ambiguous. See Ohio court’s interpretation infra note 158. (4) The defenses under the statute include neither the common law contributory negligence nor assumption of risk defenses. (5) CERCLA imposes a financial liability limit, albeit a high one, on damage recoveries for natural resource injuries. Anderson, supra note 3, at 427-31.

The joint and several liability question was litigated repeatedly, particularly prior to the explicit contribution sections added by SARA in 1986. The conclusions were that it may be imposed on responsible parties, as noted by the court in Colorado v. Asarco, Inc., 608 F. Supp. 1484, 1486 (D. Colo. 1985), which reviewed several other holdings to that effect. The Asarco court’s interpretation is supported by the broad remedial intent behind CERCLA.

41. 42 U.S.C.A. § 9613(f)(a) (West Supp. 1989). Superfund has been characterized as “a federal bill collectors’ statute, identifying such a broad group of debtors that Congress may have reached the limit of the constitutionally required rational nexus that


40. Anderson, supra note 3, at 427. Common law rights and remedies are preserved under CERCLA (42 U.S.C. § 9614(a)), but actions under the statute carry different implications:

The liability provisions of CERCLA constitute a legislative scheme that substantially departs from common law in the area of hazardous wastes. Liability under CERCLA does not depend on the principles of nuisance, negligence, and trespass traditionally used in pollution tort cases. Instead, parties are liable for the costs of cleaning up hazardous substances simply on the basis of their relationship either to the site contaminated... or to the hazardous substances themselves, regardless of fault.

Garber, supra note 39, at 367 (footnote omitted).

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tended that parties responsible for spills or releases, irrespective of their identities, provide complete remediation and full compensation for harms caused to public natural resources by their activities. Federal or state agencies are aided in damage recovery efforts by the rebuttable presumption attaching to trustee assessments when they are conducted according to the regulations promulgated by DOI. How such a presumption operates if the government, represented by the agency, is also a PRP is unclear and remains untested.

C. Authorized Uses of Recovered Damages

Recovered damages under incident-specific plans developed and adopted by the trustee may be used "only to restore, replace, or acquire the equivalent of" the injured or destroyed natural resources. Statutory language governing legitimate uses of money recovered in a natural resource damages action should be read together with congressional emphasis on restoring injured resources. Such a reading "makes it obvious that . . . the measure of damages must not only be sufficient to cover the intended restoration or replacement uses in the usual case but may in some cases exceed restoration cost by incorporating interim lost use value as well." The portion of recoveries in excess of the cost to restore damaged sites are intended for use in acquiring new resources.

The effectiveness of restoration or replacement depends upon the amount of damages recovered. In turn, this amount depends upon the methodologies used to calculate the loss. Complexity and contro-
versy surround this phase of the action. Congress recognized the trustees' need for a comprehensive system for pursuing recoveries, despite the inherent difficulties of reaching consensus on even the most basic questions. Any recovery scheme must make critical underlying assumptions about legitimately compensable values of particular natural resources. Then, the types and degrees of loss when natural resources are injured or destroyed must be measured according to rational processes.

II. VALUES AND VALUATION OF NATURAL RESOURCES

The values legally attributable to public natural resources are unsettled. Consequently, the appropriate remedy is unclear when resources are injured or destroyed by hazardous substances. "The long awaited promulgation of the Department of the Interior regulations . . . [did not] quiet the controversy."46 Underlying challenge to those rules is concern over the proper compensable values and the proper methodologies to quantify lost value in monetary terms. The DOI rules and their deficiencies exist against a backdrop of competing philosophies and economic valuation schemes.

A. Natural Resources Values

Deciding what has actually been lost when natural resources are injured or destroyed is an obvious prerequisite to awarding redress through monetary damages. People may be able to list values they intuitively consider important. Yet such constructs, even if legitimate, often outstrip the analytical tools available to convert them into working methodologies for quantifying losses in monetary terms. For example, historical value, therapeutic value, genetic diversity value, cultural value, and spiritual value arguably all have great social worth. Nevertheless, these values probably fall outside any legal scheme for compensation when they attach to publicly held property.47 Even when the legislature incorporates value concepts into the law, they can remain quite vague:

Congress has offered little guidance in evaluating the types of value that are compensable. In the Fish and Wildlife Conservation Act of 1980 [for example], Congress declared only that "[f]ish and wildlife are of ecological, educational, aesthetic, cultural, recreational, economic, and scientific value to the Nation." Yet this listing of value types obscures the most crucial questions. Surely wildlife has ecological value, but what does that mean? Does Congress intend to protect wildlife's ecological value to human beings, to

47. Idiosyncratic value is sometimes recognized by courts granting recoveries for private property damages. RESTATEMENT (SECOND) OF TORTS § 929(1)(a) and comment b (1979).
other wildlife, or to the ecosystem as a whole? What does economic value mean?48

One approach to the analysis of natural resource values divides them into three distinguishable types: use value, existence value, and intrinsic value.49 The reliability of measurement techniques varies among the groups. Nonetheless, quantification difficulties ought not to obscure the legitimacy of the values themselves.50

First, “use value” equates the worth of natural resources with the uses people make of them. Some uses are consumptive, such as extraction of minerals, hunting, or fishing. Some uses are nonconsumptive, such as bird-watching, scuba diving, or camping. Actual human behavior provides the evidence for use valuations: “use value for public resources approximates market value for private resources, which is the standard measure of damages in our capitalist system.”51 Courts have traditionally relied on uses made of natural resources to calculate damages, as in awarding the market value of the timber lost in a destroyed forest or the cost to replace fish in a contaminated hatchery. Consistent with this approach, DOI translated use values into levels of service provided by a natural resource. Recovery under the rules is predicated on measurement of the decrease in services after an injury.52 The trustee would thus be seeking recovery of “lost economic rents from resources it controls . . . [Such rents] are measured by the money value of the extra effort [needed] . . . to receive the same [service] . . . at a substitute, ‘next best,’ [site].”53

Demonstrably, however, natural resources have value beyond the direct uses people make of them or the economic profit they may generate. Legislation to preserve wilderness areas or to protect endangered species testifies to such consideration. The second term, “existence value,” encompasses the nonuse importance people place

48. Cross, supra note 46, at 280 (footnote omitted).
49. Id. at 280-81.
50. Legal recognition of the values to be protected and liability for compensation when the resources to which they attach are injured may well spur economists to further refine techniques for quantifying loss.
51. Cross, supra note 46, at 281.
52. The quantification of injury phase in a damages assessment under the DOI rules has as its purpose “to establish the extent of the injury to the resource in terms of loss of services that the injured resource would have provided had the discharge or release not occurred . . . [T]he Quantification phase include[s] methods for establishing baseline conditions, estimating recovery periods, and measuring the degree of service reduction stemming from an injury to a natural resource.” 43 C.F.R. § 11.13(e)(2) (1987) (emphasis added).
on natural resources. This value prevents economic or exchange-based considerations from resulting in scenarios such as "selling the Grand Canyon to the highest bidder for commercial development, if that sale would yield the most profit." \(^4\) Existence value is linked to peoples' expectations and future options: people may desire to visit a national park, but may postpone doing so for years while still valuing their future ability to do so; people may benefit from medical advances dependent on the preservation of organisms whose utility is currently unknown. \(^5\) People often manifest belief in existence value vicariously, for example through membership in environmental groups even though the individual supporters may never experience any direct benefit from the preservation of the whale or a redwood forest. \(^6\)

The existence of natural resources also has a "bequest value" facet as manifested in the importance one generation places on preserving unspoiled natural resources for the benefit and enjoyment of future generations. \(^7\) Arguably, the presence of natural resources, even unused, has value to humans significant enough to be cognizable at law. The nation's practical and psychological well-being is enhanced by the existence of natural resources in a condition and in quantities sufficient to perpetuate their current levels of variety and abundance.

Use value or existence value, or even both together, do not account for a third type of loss sustained when natural resources are destroyed. "Intrinsic value" refers to the "inherent worth possessed by natural objects" \(^8\) by virtue of their status as natural creatures or objects, independent of human uses made of them or even of human existence. Advocates of this concept \(^9\) reject the anthropocentric assertion that the value of things depends exclusively upon their contribution to furthering human interests. \(^9\) However, no reliable methods...
ology is available for gauging and incorporating an intangible value such as intrinsic worth into damages assessments. Moreover, the concept itself is controversial as a compensable factor in calculating natural resource damages. Monetizing such losses is certainly problematic. Nevertheless, the actual cost of natural resource damages caused by polluters seems inadequately compensated under the sterile formula posited as the correct approach by some economists: “The theoretically correct way to assess damage to natural resources is to measure the decrease in value of the flow of services from the affected resource to the public.”

B. Value versus Cost and the Open-Access Resources Complication

The controversy surrounding compensable natural resource values carries over to the debate about the proper measure of those values. When the injured natural resources are public (that is, open-access), arguably the loss cannot be converted into a rational cost figure assessable to responsible parties. Monetary units can never express the actual value of the resources, either because of a lack of public consensus or because the lost functions are too complex to be reflected in any practical valuation methodology. Yet failure to place economic value on natural resources eliminates the deterrent to future pollution, reduces protection for ecosystems, and sacrifices the multiplicity of social interests in the resources. Polluters benefit from consumption of public resources while incurring no cost to themselves either for the harms they cause or for their disproportionate depletion in environmental regulation, such as the Endangered Species Act.” Id. (footnote omitted).

61. Studies to probe how widely intrinsic value is credited can yield only subjective results. Few measurement techniques have been devised to establish empirically the pervasiveness of such beliefs or their strength. Furthermore, even those who adhere most strongly to the notion may consider it undesirable to place monetary value on nature’s intrinsic value. Monetizing the loss implies that it is fully replaceable and that what is unique has interchangeable counterparts. The effect in the minds of some is a degradation of the natural world to the equivalent of a marketable commodity. Newlon, Defining the Appropriate Scope of Superfund Natural Resource Damage Claims: How Great an Expansion of Liability?, 5 VA. J. NAT. RESOURCES L. 197, 207 n.74 (1985). But taken to its logical extreme, the ethical argument against monetizing natural resource losses “leaves the law only two options: Economically valuing natural resources at zero or at infinity.” Cross, supra note 46, at 294. Neither option is appropriate: the former creates incentive to destroy the resources, and the latter would lead to grossly disproportionate damage assessments.


63. Yang, supra note 57, at 10,312.
tion of public holdings. Such a situation illustrates "externalized cost," a construct characterized by overconsumption and misallocation of resources. Valuing the resources in monetary terms and holding polluters accountable serves to internalize the cost of polluting activities, so that the goods and services provided to society reflect their true cost.

Forcing internalization of costs is one apparent objective of CERCLA. The goal is to ensure "that those responsible for any damage, environmental harm, or injury from chemical poisons bear the costs of their actions." Unless people who destroy natural resources are held accountable financially, the costs are borne by the public with no impact on the polluter's business activities and no incentive on the polluter to control destructive activity. More efficient allocation of resources should result if the legal system requires polluters "to indemnify the public, via the state" for the damage they cause.

The difficulty courts face in attempting to define and quantify damages turns in part on the relationship between cost and value. To an economist:

Cost is the out-of-pocket expense required to produce a good, or in the damages context, the expenditures required to restore or replace a resource. Value is a measure of what the change in the resource actually cost society, measured by the public's willingness to pay for the lost services the resource had produced. To the extent that the market price of a resource reflects all the services the resource produces, cost will be the same as value.

The only empirical evidence of the price at which cost and value converge in this construct is derived from a transaction between a seller and a buyer. However, the absence of a competitive market...

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64. Internalization of costs is an economic theory advanced as a means of increasing the overall welfare of society by having goods and services reflect their actual cost. The process provides incentives for the most efficient and cost-effective operation of a free-market economy. Sources for discussion of this and related economic theories which color valuation analyses include: G. Calabresi, The Costs of Accidents: A Legal and Economic Analysis (1970); R. Posner, Economic Analysis of Law (1986); Calabresi, Some Thoughts on Risk Distribution and the Law of Torts, 70 Yale L.J. 499 (1961); Coase, The Problem of Social Cost, 3 J. Law & Econ. 1 (1960).

65. Yang, supra note 57, at 10,312; Cross, supra note 47, at 271.


67. Halter & Thomas, supra note 4, at 7-8. These costs would be reflected in the price of goods. In the effort to maximize profits, businesses theoretically will minimize damage to the environment so long as the potential liability for harms caused is made to exceed the cost of avoiding the harm.

68. Newlon, supra note 61, at 204 (footnotes omitted) (emphasis added).

69. "If you know the market price of a unit of use of a resource, say a day of fishing in a trout stream, then you can use that cost figure as a measure of its value, because the two will be equal." Yang, supra note 57, at 10,314. Cost and value diverge, however, when the cost to replace or restore the resources or the lost services they formerly provided is higher than the benchmark standard (i.e., evidence of willingness to
for many open access resources means that cost (expenditure necessary to return a resource to its original condition or to replace it with its equivalent) may overstate or understate value. "[F]or pure market resources, cost equals value, and for pure open-access resources there is no correlation between cost and value."\textsuperscript{70} For the latter, a lost resource may have intangible values which even restoration cannot replace.

Economists consider the willingness of consumers to pay for a good . . . or service as the ultimate measurement of the value of the good. Although open-access resources are different from normal goods, economists believe that as long as the public is willing to pay for the services provided by these resources, the concept of willingness to pay exists and it should serve as a benchmark in valuing.\textsuperscript{71}

However, willingness to pay is not measurable for many open-access natural resources damaged or destroyed by hazardous substances. Even if ascertained, reliance on use value alone undervalues the loss. Moreover, selecting willingness to pay as the benchmark is fundamentally troublesome in the context of open-access natural resources valuation.\textsuperscript{72} There is something illogical about using a will-pay). Economists would view the compensation level exacted to cover the costs of restoration (\textit{i.e.}, "the expenditure necessary to replace the lost resource with an identical one or to restore it to its original condition", \textit{Id.} at 10,315) as creating a misallocation of social resources in that case. Such an award would entail a commitment to expend whatever is necessary to actually restore or replace the injured resource. On the other hand, the replacement or restoration value figure is established by an appraisal process—"the market payment elsewhere for a resource similar to the one lost."\textsuperscript{73} \textit{Id.} at 10,314. A monetary award based on an approximation of the market value of the damaged resource in such cases theoretically avoids the over-compensation to the public of the cost method. The choice between those two options is made economically so as to select the one which most closely coincides with the actual value to society, as evidenced by market forces in this construct, for which compensation is sought.

70. Newlon, \textit{supra} note 61, at 204.
71. Yang, \textit{supra} note 57, at 10,314 (footnote omitted). Willingness to pay in the context of use valuation for non-market goods or services is ascertained by evidence such as expenditures people make to use the resource: fees paid; costs incurred to travel to the resource area; and purchases in preparation for using the resource, such as fishing poles or binoculars and field guides.
72. The perspectives of buyer and seller are fundamentally different. [Contingent valuation studies (\textit{i.e.}, opinion surveys)] have reached substantially different results depending on whether individuals were asked about the price that they would pay for natural resource preservation or the price at which they would sell the natural resource. Willingness to pay for environmental commodities is typically much less than the price at which persons would sell such commodities.
Cross, \textit{supra} note 46, at 318. A hypothetical out-of-pocket measurement arguably is much more likely to result in a minimization or outright sacrifice of nonuse values than is a measurement which allows maximized expression of both use values and quality of life or option values.
ingness-to-pay standard to gauge the value of something already "owned" by the public and which may be more logically construed as "sold" to a party responsible for its loss. The willingness-to-pay appraisal standard seems particularly unsatisfactory in the context of America's attitude towards its vast resources holdings, in which politicians and citizens alike claim to have such boundless national pride. Yet that standard is the public trustees' benchmark for computing compensation under the assessment rules promulgated pursuant to CERCLA's mandate.

C. Measurement and Monetization of Natural Resource Injuries

Market valuation is consistent with common law monetization principles. Private property damage is traditionally deemed to be the difference between fair market value before and after an injury. If destruction is complete, compensation is measured by market value at the time of destruction. Courts use other valuation methods on a case-by-case basis when property has no ascertainable market value or when cost to replace or restore is less disproportionate than loss in market value. Such methods can extend satisfactorily to valuation of private natural resources because they, too, are traded in the marketplace. 

In contrast, many of the natural resources for which CERCLA allows recovery are "by definition open-access," that is, held in trust for the benefit of all the people. Often those natural resources have no commercial value and no functioning market to set a price. Hence, a disparity results between cost and value, with exacerbated problems of monetizing damages, because market-oriented economic principles are inadequate to account for the total value of a loss. This is the case when the loss involves noncommercial species of fish and wildlife, ecosystems, habitats, and areas of purely aesthetic and recreational enjoyment. "The basic difficulty with attempting to value these open-access resources is that the services and functions they provide cannot be owned exclusively . . . . Their total value is the sum of their value to all individual users . . . and potential users." They are not normal goods; the consumption of the resource by some does not necessarily subtract from others' consump-

73. For example, the value of a lake, enclosed by private land, may be inferred from the sales or rental value of the surrounding land. If the lake becomes polluted by a hazardous chemical spill and can no longer provide some of its services, such as swimming and fishing, the owner can sue to seek compensation for an amount equal to the difference between the pre-spill and post-spill sales price of the land.

Yang, supra note 57, at 10,312 n.14.

74. Id. at 10,312.

75. Newlon, supra note 61, at 206 (footnotes omitted).
tion of the same good.\textsuperscript{76}

"[T]he economic tools for valuing nonmarket goods are still in the research stage. The result is that judicial valuation of damaged natural resources has been confusing and, from an economist's perspective, often erroneous."\textsuperscript{77} Nonetheless, some commentators assert that "any valuation scheme [under CERCLA] ultimately must be tied to market value or appropriate surrogates."\textsuperscript{78} Ostensibly adopting this view, the DOI rules codified two standard approaches for calculating damages: (1) measurement of diminution of use value and (2) restoration or replacement cost.\textsuperscript{79} The measurement of diminution of use was intended to recover just enough to compensate for lost services. The measurement of restoration or replacement cost was intended to recover the lost services at the damaged site or their equivalent elsewhere.\textsuperscript{80}

1. Diminution of Use Valuation

Loss of use value is reflected in a reduction of recreational or other public use of an affected area. The lost value may be measured "by

\begin{footnotes}
\item[76] Yang, \textit{supra} note 57, at 10,312.
\item[77] Id. (footnote omitted).
\item[78] Warren & Zackrison, \textit{supra} note 24, at 49.
\item[80] Some courts had adopted such a market or use value approach to natural resource injury before the assessment rules were issued, viewing the approach, like DOI, as consistent with CERCLA intent. For example, in Idaho v. Bunker Hill, 635 F. Supp. 665 (D. Idaho 1986), the state brought suit against the present and former owners of a mine under both CERCLA and common law for natural resource damages caused by mining waste. The Bunker Hill court relied on comments from the Congressional Record by Senator Simpson as illustrative of congressional intent: "The senator recognized both measures of recovery proposed by the defendant and the plaintiff. Damages to the natural resources may be calculated on a value basis and on a cost-of-restoration basis. The calculation which provides the least recovery in terms of dollars is the appropriate measure of damages." Id. at 676 (emphasis added). Senator Simpson's actual comments were:

"I also trust that the traditional legal rules for calculating of damages for injury in tort will be observed as part of cost effectiveness. For example, the law achieves cost effectiveness by awarding the difference in value before and after the injury, and where the injured interest can be restored to its original condition for less than the difference in value, the cost or [sic] restoration is used." Breen, \textit{What Do We Know?}, \textit{supra} note 25, at 10,307 (quoting 126 Cong. Rec. S15008 (daily ed. Nov. 24, 1980)). However, it has been observed that although Senator Simpson ultimately voted for CERCLA, he was not a proponent of the legislation and his comments should not carry significant weight as indicative of congressional intent. "The Supreme Court has noted, '[W]e have often cautioned against the danger, when interpreting a statute, of reliance upon the view of its legislative opponents.'" Id. at 10,308 (quoting NLRB v. Fruit and Vegetable Packers, 377 U.S. 58, 66 (1964)).
\end{footnotes}
changes in consumer surplus, any fees or other payments collectable by the government for a private party's use of the natural resource. If the lost resource is marketed, the diminution in market price of the resource provides the damages estimate.

Unit valuation is one technique for assessing loss of use damages. It is a common method for valuing fish kills, for example, and is well suited to situations where procurement of replacement hatchery stock is contemplated. The method operates by pre-assigning dollar values per unit according to a "willingness to pay" standard, then multiplying cost per unit by the estimated number of units lost. Theoretically, such valuation tables could be devised for any commercially obtainable species. However, the unit value approach is inherently defective if used as a means of accounting for environmental losses: it depends upon accurate counts of the affected resource for full compensation; it is limited to resources that are commercially exploited (most wildlife falls outside this scheme); it fails to comprehend the damage to the entire ecosystem resulting from the injury or destruction of the counted resource; and it ignores any existence or aesthetic values of the resource.

Moreover, such tabulations are inflexible. Their application may skew results when a harvested market value is applied to unharvested losses, as when commercial fishery prices are superimposed on fish which are not stocked or when the value of a caged songbird is attributed to a meadowlark. The technique applies actual price equivalences if the resource is traded, or surrogate prices if comparable commodities are traded. In the public resource arena, this approach is troublesome: "For example, values for the fish, shell fish, plants, and coral in a live reef cannot be reflected adequately in the prices charged for them by laboratory suppliers or shell and curi-

81. "[C]onsumer's surplus is the difference between the price that consumers pay for the goods and services they purchase and the value to them of those goods and services . . . [It is] 'a measure of net benefits—benefits above costs paid—received by an individual from some good or service purchased.'" Halter & Thomas, supra note 4, at 25 n.105 (citation omitted).
83. Id. § 11.83(c).
84. "More than one-third of the states have indicated that they use replacement cost for determining damages in fish kill cases, and several state legislatures have formally adopted replacement schedules." Halter & Thomas, supra note 4, at 19.
85. For example, if an oil spill is estimated to have destroyed 92 million aquatic creatures, and if $6 is the replacement value of each destroyed organism, then a damage award of $5,526,583.20 would result from multiplying the cost per unit times the number destroyed. Puerto Rico v. SS Zoe Colocotroni, 628 F.2d 652, 677 (1st Cir. 1980).
87. See infra notes 103-22 and accompanying text, Section II.C.3, "Replacement Cost Case Study."
osity shopowners.88

Other loss of use methodologies relying on valuation in accordance with willingness to pay include travel cost89 and hedonic pricing methodologies.90 The travel cost methodology, to determine the monetary loss from a damaged recreational resource, attempts to set a willingness-to-pay figure based on the sum of travel expenses, entrance fees, and opportunity cost of travel time invested. Data collection is difficult, and researchers must isolate the diminution of use attributable to the injury alone by correlating the figure to a set pre-injury baseline condition. Hedonic price valuation applied to loss of use measurements is similarly speculative. That technique aims at capturing “the value of a non-marketed resource as a measurable component of a marketed resource”91 based on inferences from private market appraisals.92 However, attributing the cause of such changes is usually very difficult.

Reliance on the actual lost use valuation methodologies as the sole measure of damages limits full recovery, particularly when use of the natural resource is strictly construed to include only those uses documented and committed at the time of injury, as under the DOI rules. Alternatively, contingent valuation methodologies seek out people’s expressions of value in response to direct inquiry.93 Contingent valuation applies “techniques that set up hypothetical markets to elicit an individual’s economic valuation of a natural resource”94 to arrive at a more thorough accounting of the true level of social loss resulting from injury to natural resources. These techniques include surveys of citizens to ask them what monetary value they place on an identified resource.95

88. Anderson, supra note 3, at 443.
89. i.e., an individual’s incremental travel costs to an area, used as a proxy for the price of the services of that area, with damages being the measurement of the difference between the value of the area with and without a discharge or release. See, e.g., Cross, supra note 46, at 310-12.
90. i.e., indirect estimates and analyses of behavior used by implication as a measure of value, such as estimates of the value of life based on extrapolation from the amounts people pay to reduce health risks. The technique may be applied in a natural resources setting to estimate how great a value has been lost by destruction or injury of the resource through extrapolation from roughly comparable market expenditures. See, e.g., id. at 313-14.
91. Anderson, supra note 3, at 444.
92. An example might be the change in wage and price differentials as measured against housing prices in an area where air quality has declined due to pollution. Id.
93. Cross, supra note 46, at 316 n.246.
95. A simplistic example would be “How much are you willing to pay for preserving the remaining grizzlies in Yellowstone National Park?” Cross, supra note 46, at 315.
On the one hand, critics of contingent valuation consider it too susceptible to distortion by personal bias (such as a strong preservationist stance), so that the response is not a reliable indicator because it would not be borne out in actual practice. Also, the credibility of the results depends on the skill of the interviewer and the quality of the survey instrument. On the other hand, those results arguably constitute a more reliable measure of the value of open-access natural resources than do market data, particularly if the "willingness to sell" standard is also applied in the survey. Behavior with respect to commonly held resources may reflect a sense of powerlessness to affect change, whereas the actual perceived worth of a resource may emerge when setting a price at which one would be willing to part with it.

2. Restoration or Replacement Cost

The second standard used to measure damages is restoration or replacement cost. Restoration entails actual rehabilitation of the damaged site; replacement costs are those needed to procure substitutes for lost organisms or entire substitute sites. When restoration cost recovery would be grossly disproportionate to the value lost, it is generally considered an inappropriate compensatory remedy. However, the measuring methodology ultimately establishes the reasonableness of restoration costs. For example, a unit valuation methodology predicated on market values when applied to a marine environment damaged by a hazardous substance would create the phenomenon that "certain marine mammals are valued at zero. Any restoration efforts would be grossly disproportionate to this measure." The inadequacy of such a result is evident: "Even where full restoration cost is not the appropriate measure of natural resources damage, trustees are entitled to recover something."88

The decision to restore implies the commitment to expend what is necessary to return the injured resource to its pre-injury condition. That choice eliminates the need to reduce lost use value to suspect dollar amounts. Even if ecologists and other scientists do not fully agree on the adequacy of the plan, restoration has the advantage of providing truly compensatory results which are not produced by diminution in use awards. These results are measureable by "in kind" comparisons "between the biological character of the resource before the injury, its scenic value, and the services it rendered, on the one hand, and the same attributes as provided by the restored resource

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96. For example, people may place a high personal value on clean air, yet feel powerless to change its polluted condition.
97. Cross, supra note 46, at 335 (footnote omitted) (emphasis added).
98. Breen, What Do We Know?, supra note 25, at 10,310.
or its replacement, on the other hand.\footnote{99}

The restoration option will very often result in a higher level of recovery than the damages calculated by using the loss of use method within the CERCLA liability limit of $50 million per responsible party per release or incident, above and beyond response costs.\footnote{100} Yet balance between cost and benefit need not be ignored, and a rule of reason is implicit in any judicial determination of damages. A goal of placing the injured parties as nearly as possible in the position they would have been in had there been no injury (i.e., a return to “baseline” in DOI terminology)\footnote{101} has common law precedent. However, the complications in an open-access resource loss situation are perhaps best illustrated by an analysis of the problems and issues raised by claims for natural resource damages in \textit{Puerto Rico v. SS Zoe Colocotroni}, a case decided just prior to CERCLA’s enactment.\footnote{102}

3. Replacement Cost Case Study

The damage assessment difficulties examined in \textit{Colocotroni} underlie any attempt to devise rules for restoration or replacement cost recoveries for open access resources. The case concerns the government’s obligation to manage natural resources in a manner consistent with the “public trust” concept.\footnote{103} The case also illustrates the valuation problems when a damaged site cannot be restored, but when an analogy to unit value market prices is proposed as the measure of damages.

The SS Zoe Colocotroni, a tramp oil tanker, ran aground on a reef off the coast of Puerto Rico in March 1973. In order to lighten and refloat the vessel, the captain ordered approximately 1.5 million gallons of crude oil dumped into the ocean. The discharge floated into a bay on a southern peninsula of Puerto Rico. Despite extensive cleanup activities, the oil caused considerable harm to about twenty acres of shore including two mangrove swamps along the bay, an

\footnotesize{\textsuperscript{99} Anderson, \textit{supra} note 3, at 446.}

\footnotesize{\textsuperscript{100} The responsible party may be liable for “the total of all costs of response \textit{plus} $50,000,000 for any damages under this subchapter.” 42 U.S.C.A. § 9607(c)(1) (West Supp. 1989) (emphasis added).}

\footnotesize{\textsuperscript{101} 43 C.F.R. § 11.14(e) (1987).}

\footnotesize{\textsuperscript{102} 628 F.2d 652 (1st Cir. 1980), \textit{cert. denied}, 450 U.S. 912 (1981).}

\footnotesize{\textsuperscript{103} Although the opinion preceded enactment of CERCLA, the court was aware of and alluded to that legislative process and debate in Congress at the time, and the court’s treatment of the “public trust” is not inconsistent with the CERCLA definition. \textit{Colocotroni}, 628 F.2d at 676 n.24.}
extensive fish kill, and a significant decline in the number of marine organisms in the area. The Commonwealth of Puerto Rico and the local Environmental Quality Board (EQB) sued in their capacity as “a governmental entity on behalf of its people for the loss of living natural resources.” The claim against the ship (in rem), its owners, and its insurers was for injury “broadly conceived” that was caused to the natural environment by the discharge.

The lower court had awarded damages of approximately $5.5 million for harm to marine organisms. The figure was calculated using biological supply house catalog prices. An additional $559,500 in damages for the destruction of the mango trees resulted in a total damages award in excess of $6 million (above and beyond uncontested cleanup costs of $78,108). The statute empowered the EQB to recover “the total value of damages caused to the environment

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104. Id. at 657-60.
105. Id. at 670-71.
106. Id. at 673. The plaintiffs elected to sue under a local statute, title 12, section 1131(29) of the Puerto Rico Laws authorizing actions to recover for environmental damages. Id. at 671-72. Puerto Rico, “as owner of the real property primarily affected by the oil spill . . . would, like any private landowner, have a cause of action in admiralty to recover whatever damages it could prove under conventional principles for its private economic loss as measured by diminution of market value in the coastal land.” Id. at 670 (footnotes omitted) (emphasis added). The choice to sue under a statutory cause of action, rather than to rely on some implied common law action which the Commonwealth as trustee might have brought, probably was prompted by the conceded fact that the damaged land had “no significant commercial or market value.” Id. at 673; see also Grady, Commonwealth of Puerto Rico v. SS Zoe Colocotroni: State Actions for Damage to Non-Commercial Living Natural Resources, 9 B.C. ENVTL. AFF. L. REV. 397, 401, n.21 (1980).
107. Colocotroni, 628 F.2d at 662.
108. Biological supply house catalogues set the lowest unit replacement cost at $0.06 per organism; the court set the damages at a multiple of that unit price using estimates of the number of organisms destroyed by the spill. Puerto Rico v. SS Zoe Colocotroni, 456 F. Supp. 1327, 1344-45 (D.P.R. 1978), aff’d, 628 F.2d 652 (1st Cir. 1980), cert. denied, 450 U.S. 912 (1981).
109. Colocotroni, 628 F.2d at 663. One commentator cites this result as an example of why it is important to “distinguish between the market value of resources in the wild and the market value of the ‘harvested’ good. . . . Many resources are sold in their ‘harvested’ [value-added] state but have no commercial value in the wild at all”. He cautions courts against using the price of the “harvested” good as a surrogate for use value, citing as “a particularly absurd example” the formula used by the district court in Colocotroni with its “unreasonable results”. Developments in the Law: Toxic Waste Litigation: Natural Resources Damages, supra note 26, at 1572.
and/or natural resources’” in actions brought for violation of the anti-pollution provisions.\textsuperscript{110}

The court of appeals held that the statutory language did not restrict the state to ordinary market damages,\textsuperscript{111} concluding that “strict application of the diminution in value rule would deny the state any right to recover meaningful damages for harm to such areas, and would frustrate appropriate measures to restore or rehabilitate the environment.”\textsuperscript{112} The court adopted a standard for setting damages in such cases, “borrowing from the suggestion provided by federal legislation”\textsuperscript{113} that “it is desirable to provide for environmental damages apart from commercial loss, ordinarily measured by a market value yardstick.”\textsuperscript{114} The court ordered recovery set at “the cost reasonably to be incurred by the sovereign or its designated agency to restore or rehabilitate the environment in the affected area to is [sic] pre-existing condition, or as close thereto as is feasible without grossly disproportionate expenditures.”\textsuperscript{115}

\begin{enumerate}
\item Colocotroni, 628 F.2d at 673 (title 12, section 1131(29) of the Puerto Rico Laws (emphasis added)).
\item The court recognized, “Many unspoiled natural areas of considerable ecological value have little or no commercial or market value,” and, to the extent that such areas may have commercial value, “it is logical to assume they will not long remain unspoiled, absent some governmental or philanthropic protection.” \textit{Id.} at 673. Such a theory is predicated on the internalization of costs construct. The court reports the testimony of a natural resources economist witness for plaintiffs to rationalize the replacement cost figure awarded by the lower court. \textit{Id.} at 660.
\item \textit{Id.} at 673. The court found support for its conclusion that compensation for the destruction of natural resources may result in an award of damages in excess of the lost market value of the affected real estate by aligning Puerto Rico’s environmental legislation with evidence of the intent of similar federal environmental legislation. The court referred specifically to the Clean Water Act Amendments of 1977; the Outer Continental Shelf Lands Act Amendments of 1978; the Submerged Lands Act; and the CERCLA legislation which was pending in Congress at the time. \textit{Id.} at 673-74, 676 n.24. “Puerto Rico obviously meant to sanction the difficult, but perhaps not impossible, task of putting a price tag on resources whose value cannot always be measured by the rules of the market place.” \textit{Id.} at 674.
\item In particular, the Clean Water Act Amendments of 1977 significantly expanded the scope of responsible party liability: the federal government and the states were authorized to recover “costs or expenses incurred . . . in the restoration or replacement of natural resources damaged or destroyed as a result of a discharge of oil or a hazardous substance.” 33 U.S.C. § 1321(f)(4) (Supp. 1989).
\item \textit{Colocotroni}, 628 F.2d at 674.
\item \textit{Id.} at 675. The \textit{Colocotroni} court answered the argument that a factfinder cannot exactly determine the costs reasonably to be incurred for restoration: “Admittedly, such a remedy cannot be calculated with the degree of certainty usually possible when the issue is, for example, damages on a commercial contract. On the other hand a district court can surely calculate damages under the forgoing standard with as much or more certainty and accuracy as a jury determining damages for pain and suffering or mental anguish.” \textit{Id.}
\end{enumerate}

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Two limitations circumscribe the Colocotroni standard: restoration damages for noncommercial natural resources must not be “grossly disproportionate” to the harm caused, and the standard is inappropriate where actual restoration is not feasible or not contemplated.116 While affirming the use of restoration costs as the preferred measure, the court limited the remedy to steps which a “reasonable and prudent sovereign or agency” would take117 as “component[s] in a practicable plan for actual restoration.”118 Granting the remedy would be inappropriate if literal restoration is impossible: reintroducing fish into contaminated water where they could not survive, or replanting mangroves in a swamp too polluted to sustain them, would be futile gestures.

Similar restrictions appeared in the DOI regulations. However, DOI injected an additional limitation that virtually ensured that few restorations could be implemented: if the restoration costs more than the lost use value, whether or not restoration is feasible, the rules preclude it as the measure of damages.119 In contrast, the Colocotroni court remained focused on the fiduciary responsibility of the state in its role as public trustee: “[T]he Commonwealth must have the ability to have the corpus of said public trust reimbursed for the

116. Applying its standard to the Colocotroni facts, the court concluded that the millions awarded as replacement value of the destroyed organisms was error because the habitat had been rendered unfit to sustain life and because the state did not intend to actually procure the organisms. Id. at 677.

117. Id. at 675. One commentator criticized the Colocotroni court: “The court rejected the valuation method on the basis of technical feasibility rather than on the merit of replacement cost as a valuation method.” Yang, supra note 57, at 10,312 n.11. The critic would have preferred that the court acknowledge that “[t]he key to the use of restoration/replacement value or cost is to look for social decisions . . . [such as how much was recently invested to establish a public park comparable to a destroyed one] which reflect the value of the damaged resource.” Id. at 10,315. This approach, however, is itself vulnerable to criticism for its market theory bias.

However, as another commentator observed:

The court emphasized the distinction between a practicable plan for actual restoration and the use of the alleged replacement value of 92 million invertebrate animals “as a yardstick for estimating the quantum of harm caused to the Commonwealth” [Colocotroni, 628 F.2d at 677]. The court found that the latter theory had “no apparent analog in the standards for measuring environmental damages” [Id.]. Although this statement may be true, the concept of using replacement value as a method of assessing monetary compensation for injuries to the environment should not be dismissed out of hand. It is difficult to draw a principled distinction between money compensation to a victim for an injured part of his body and money compensation to a group of victims for an injury to their environment.

Zeller & Burke, supra note 86, at 1111-12.

118. Colocotroni, 628 F.2d at 677 (emphasis added). “[R]estoration as a theory of damages assessment in cases involving injuries to the environment [is complicated by] the difficulty of proving the feasibility of restoration. The feasibility of restoration may depend to a large degree on the success of a previous cleanup effort which, in turn, may depend on available scientific technology.” Zeller & Burke, supra note 86, at 1107.

diminution attributable to the wrongdoers." The ruling "suggests trustees may recover the full cost of restoration even when it is significantly higher than the apparent diminution in value, so long as the relationship is reasonable." The court's conclusions are consistent with congressional intent in federal environmental legislation to preserve natural resources. The DOI rules de-emphasized that goal, actually codifying impediments to full damages recoveries.

III. The Public Trustees' Damage Assessment Rules

Despite the inherent difficulties, government trustees need some rational scheme for conducting natural resource damage assessments in order to arrive at fully compensatory and consistent results. CERCLA mandated the development of procedures to measure and quantify the injury caused by a release of hazardous substances. Although trustees are not required to use the codified procedures, assessments conducted under the rules give rise to a rebuttable presumption that the damages sought are the proper measure of compensation. Theoretically, such an advantage bolsters the potential for more frequent and more substantial recoveries. DOI was assigned the task of devising these important rules.

A. As Promulgated

The DOI rules apply in two scenarios to direct the procedures for determining the extent of harm resulting from a hazardous sub-

120. Colocotroni, 628 F.2d at 662 n.42.
121. Breen, What Do We Know?, supra note 25, at 10,310.
122. See infra notes 139-87 and accompanying text, Section III.B. "Successful Challenges."
124. "Interior's response to its assigned task of promulgating regulations for assessing natural resource damages was, to put it charitably, relaxed." Ohio v. United States Dept. of Interior, 880 F.2d 432, 440 (D.C. Cir.), reh'g denied, 897 F.2d 1151 (D.C. Cir. 1989) (en banc). The rules appeared three years beyond the due date and five years after CERCLA was enacted. A DOI director underscored the difficulties the agency encountered: the problem of reaching consensus on the exact definition of damages intended by Congress; uncertainty about what criteria to apply in establishing the required cutoff between a minor spill (to be addressed by Type A assessment procedures) and a major spill (to be addressed by Type B assessment procedures); uncertainty about the appropriate threshold for inclusion and exclusion of organisms affected by a spill; concern regarding the choice of valuation options; and uncertainty about how to account for subtle or long-term damages less obvious than, for example, waterfowl killed by an oil slick (e.g., damages to aesthetics or long-term effects of subchronic levels of a chemical in affected wildlife). Dower, Superfund Sleeper Sends Signals, ENVTL. FORUM, Mar. 1984, at 44-45.
stance discharge. Type A assessment is for "minor" spills, in which simplified assessments involving minimal field observation are processed using a computer model with automated value calculations. Type B assessment is for more extensive releases in which alternative, individualized protocols apply in three phases: Injury Determination phase, Quantification phase, and Damage Determination phase.

The purpose of [the Damage Determination phase] is to establish the appropriate compensation expressed as a dollar amount for the injuries established in the Injury Determination phase and measured in the Quantification phase. . . . [The Damage Determination phase] includes guidance on acceptable economic methodologies for estimating compensation based on: the costs of restoration or replacement; or a diminution of use value.

DOI interpreted conservatively the CERCLA damage recovery provisions. The agency saw no clear congressional intent to deviate from "common law and economics" as the source of valuation methodologies. Consequently, the predominant focus in the Damage Determination phase was on measuring the lost use value of the injured resources, converted into such "services" to humans as "water for drinking, the use of fish or wildlife for food, and the use of many components of the environment for recreation." Yet, the liberalization over common law approaches to liability and defenses evident in CERCLA suggests that "[i]n particular, the natural resource damage provisions [aimed to] abandon the conservative common law approach mandating whatever damage recovery was least costly to the defendant." Procedures to achieve CERCLA goals should facilitate, not restrict, government efforts to obtain full compensation. Furthermore, the rebuttable presumption accorded to assessments conducted under the rules supports the contention that Congress ex-

126. Id. § 11.40-.41. The automated system is the Natural Resource Damage Assessment Model for Coastal and Marine Environments (NRDAM/CME)
127. The DOI Type A rules (those applicable to minor, point-source discharges in marine environments) resemble the unit valuation approach in that a dollar value is calculated for each lost organism. For example, a fur seal is valued at $15 based on the expected price its pelt would fetch. A goose could be valued up to $35 based on the popularity of hunting. The method is convenient "when the damaged resource provides consumptive services and can be counted (e.g., number of waterfowl or number of recreational fish killed by a spill)," or "for valuing damage incidents where a case-by-case assessment is too expensive." Yang, supra note 58, at 10,313-14.
129. Id. § 11.13 (e)(3) (emphasis added).
130. DOI argued in defense of the methodologies incorporated into its rules that "Congress intended that damages under CERCLA would be calculated according to traditional common-law rules". Ohio v. United States Dept. of Interior, 880 F.2d 432, 455 (D.C. Cir.), reh'g denied, 897 F.2d 1151 (D.C. Cir. 1989) (en banc). DOI also emphasized its focus on economic efficiency in the drafting of the rules. Id. at 456.
132. Anderson, supra note 3, at 450.
pected government to adopt "regulations that would press well beyond traditional damage awards . . . [and] facilitate recovery for difficult-to-quantify, difficult-to-characterize injuries that would not be compensated under common law."

Under the rules, trustees were required to select the least costly alternative between two types of approved compensation: loss of use or restoration. That is, the restoration cost measure could be pursued as a remedy only when compensation for lost use at the damaged site would cost more than restoration. Moreover, "restoration authorization . . . [was] limited to restoring 'services' that have use value and ignored other values of the damaged natural resources." The rules prescribed market value as the required monetization principle. Other methodologies which might capture other losses such as existence value were to be used "only if the authorized official determine[d] that no use values [could] be determined." Mixed solutions were precluded, such as combining some lost use with some restoration or replacement compensation to tailor a remedy to site-specific circumstances.

In spite of the mandate in CERCLA and the special category of both the injured property and the authorized plaintiffs under the Act, DOI's damages recovery focus remained surprisingly traditional: the least costly alternative to the responsible party designed for market-construct compensation to the injured party. Opponents of that approach observed that requiring the trustees to choose on a "lesser of" cost basis between the loss of human use of the resource or the cost to restore the resource, coupled with DOI's "hierarchy of methodologies" for measuring damages, virtually assured the

133. Id.
135. Cross, supra note 46, at 323. The DOI rules limited the restoration or rehabilitation costs option "to those actions that restore or replace the resource services to no more than their baseline, that is, the without-a-discharge-or-release condition." 43 C.F.R. § 11.81(c) (1987) (emphasis added). Diminution of use value during the restoration or replacement process can be added to a restoration option damages figure. Id. § 11.84(g)(1).
136. "Only when the injured resource is not traded in a market or when that market is not reasonably competitive, and no comparable sales are available for use in an appraisal, may the authorized official use any of the nonmarketed resource methodologies." Cross, supra note 46, at 322 n.279 (quoting 51 Fed. Reg. 27,691 (1986)).
137. 43 C.F.R. § 11.83(b)(2) (1987). "Only when the authorized official has determined that neither the market price nor the appraisal methodology is appropriate shall . . . [the alternative] methodologies . . . be used to estimate a diminution of use value for the purposes [of damage determination]," such as travel cost, hedonic pricing methodologies and unit values. 43 C.F.R. § 11.83(d) (1987).
"minimiz[ation of] the amount of money available to restore damaged resources, from national parks to endangered wildlife."\footnote{138}

\section*{B. Successful Challenges}

Critics of the DOI rules alleged at the outset that they "understate true natural resource damages because of their exclusive focus on use value and heavy reliance on market valuation," as borne out by empirical studies.\footnote{139} For example, Type A damage measurements are accomplished through a computer model, the Natural Resource Damages Assessment Model for Coastal and Marine Environments (NRDAM/CME). NRDAM/CME assigns no value to unused resources. Moreover, the approach "focuses entirely on consumptive uses,"\footnote{140} so that "only the destroyed fish that would have been harvested are included in the damages assessment. An obvious consequence of this approach is that 'only commercial or recreationally important species have measurable social value.' Even some recreational uses of natural resources are valueless under the Department's present approach" because of the focus on consumptive use.\footnote{141} In addition, no consideration is given to important ecological attributes of lost natural resources.

On July 14, 1989, the District of Columbia Circuit Court of Appeals decided two separate but related actions challenging the adequacy of the DOI rules to fulfill the legislative goal of full compensation to public trustees for despoiled natural resources. The first opinion, \textit{Colorado v. United States Department of Interior},\footnote{142} addressed the scope and legality of the Type A damage assessment rules, incorporating by reference portions of the much longer opinion, \textit{Ohio v. United States Department of Interior}.\footnote{143} The latter case interpreted the enabling language in CERCLA, common to both Type A and Type B incidents. The decisions invalidate certain core features of the assessment procedures and require DOI to reformulate them to conform to Congress' "distinct preference for using restoration cost as the measure of damages."\footnote{144}
I. Colorado v. United States Department of Interior:

Type A Rules Challenge

The state of Colorado and three environmental groups challenged the scope and content of the Type A rules. These rules apply to assessments of "natural resources damages for discharges or releases 'in coastal and marine environments'" caused by "minor, short-duration discharges or releases of oil or hazardous substances."

Assessments of the damages are accomplished using the agency's "state-of-the-art computer model," NRDAM/CME. The computer program contains "general chemical, biological, and economic information." An authorized official enters the incident-specific data (such as estimated total quantities of discharged or released substance, the date of discharge, and the boundaries of the affected area). The automated system then calculates the natural resource damages which trustees may claim.

Petitioners asserted that the class of releases or discharges to which the rules apply is "impermissibly narrow." Although the court viewed CERCLA's authorizing language as ambiguous, it declined to disturb the scope of the DOI model for Type A damage assessments. The court concluded that DOI "acted [reasonably and] within its mandate . . . in limiting its regulatory ambit" in the case of minor, Type A, releases, after considering DOI's rationale.

145. Colorado, 880 F.2d at 484.
146. Id.
147. Id. at 488.
148. Id. at 484.
149. Id. at 485.
150. Id. at 486. The rules cover only damages caused by "minor, 'point source' discharges or releases of short duration, occurring at or near the water surface, in coastal or marine environments." Id. The limited scope had been almost universally criticized during the comment period prior to final issuance of the rules, notably by the EPA and NOAA, with the National Wildlife Federation (NWF) (one of the petitioners in Colorado and Ohio) arguing to DOI that "by Interior's own estimates about two-thirds or even four-fifths of the liquid spills, and 80 to 85 percent of the solid releases, occur in . . . nonmarine, nonestuarine areas." Id.
151. Id. at 489.
152. DOI has . . . stated a sufficient rationale for limiting the scope of its type A rules as it did. DOI specifically found that data inadequacies and scientific uncertainty precluded a more ambitious approach to the type A rules: "Coastal and marine environments were chosen as the subject of the first type A procedure because much more extensive information was available on the fate and effects of discharges or releases of oil or hazardous substances in these environments than for other ecosystems and natural resources."

Id. at 488 (citation omitted).
and the agency's intent to incrementally introduce additional segments as scientific data evolves.

Petitioners' second challenge to the Type A rules coincided with the damages valuation challenge presented in the action to invalidate Type B. On that issue, petitioners successfully argued that CERCLA mandates that damage calculations favor restoration, and that the Type A rules are inconsistent with that mandate. The court remanded the rules "to permit DOI to develop standard procedures for simplified assessments of natural resource damages consistent with relevant portions of our decision in Ohio." 153

2. Ohio v. United States Department of Interior: Type B Rules Challenge

In a consolidated action, ten states, three environmental groups and others154 petitioned for review of the Type B rules. Type B incidents are more extensive than the "minor" incident types covered by the Type A regulations and require site-specific evaluations. The Ohio court invalidated two major provisions in the rules: the so-called "lesser of" rule and the hierarchy of assessment methods.155 The court held that (1) DOI's provision "that damages for despoliation of natural resources shall be the lesser of: restoration or replacement costs; or diminution of use values" is "directly contrary to the expressed intent of Congress,"156 and (2) DOI applied an unreasonable interpretation of the statute in its establishment of a "rigid hierarchy of permissible methods for determining 'use values.'"157 The court instructed DOI "to proceed as expeditiously as

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153. Id. at 491.
154. Ohio petitioners were three environmental organizations and ten states ("State and Environmental Petitioners"), three "Industry Petitioners," and several intervenors representing public interests and industry. 880 F.2d at 432, 438 (D.C. Cir. 1989).
155. The court applied the two-step statutory interpretation test articulated in Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837, 842 (1984), to ten issues. Ohio, 880 F.2d at 441. Step One requires the court to determine "whether Congress has directly spoken to the precise question at issue." Id. (citing Chevron, 467 U.S. at 842). If so, then the court (and DOI) "must give effect to the unambiguously expressed intent of Congress." Chevron, 467 U.S. at 842-43. The Step One analysis examines the statutory language in the context of the statute as a whole. If congressional intent is evident regarding "the precise question at issue, 'that intention is law and must be given effect.'" Ohio, 880 F.2d at 441 (quoting Chevron, 467 U.S. at 843). Step Two of the Chevron test applies if "the statute is ambiguous or is silent on a particular issue." Chevron, 467 at 844-45. If so, then the court will assume the agency received from Congress the implicit authority to make choices which reasonably accommodate conflicting policies. Ohio, 880 F.2d at 441. If those agency choices and interpretations are "reasonable" and "consistent with the statutory purpose," then the court must defer to them. Ohio, 880 F.2d at 441.
156. Ohio, 880 F.2d at 441.
157. Id. at 462, 464. Recoveries under the hierarchy of methods are limited to the open market price of the resource or, if there is no competitive market, then to an "appraisal" of market value. Only if neither method is deemed by the trustee to be "appro-
possible in issuing new regulations" to conform to "the statutory

appropriate" may other methods of determining use value be employed. Id. at 462.

158. Id. at 481. The court resolved eight issues in favor of DOI:

1) DOI may retain the requirement to consider only "committed uses" (that is, current or planned public uses of the natural resource for which pre-incident commitment documentation exists) for purposes of quantifying lost services. The focus of damage assessment will be changed to emphasize restoration cost rather than use value, and "proof of a committed use is not a prerequisite to recovery of restoration costs." Id. at 462. Therefore, "a trustee is not prohibited from recovering the costs of restoring or replacing a natural resource, even when that resource has no documented 'committed use.'" Id.

2) DOI may retain a ten percent discount rate in present calculations of an expected future injury. Id. at 464-65.

3) Trustees may delegate the actual natural resource damages assessment to the PRP's themselves. Congress plainly envisioned a delegation option and DOI provided reasonable procedures. Safeguards against preferential treatment include the stipulation that the responsibility can only be delegated "if an authorized government official calls on [the PRP] to do so." Id. at 466-67. Moreover, the assessment must follow the methods outlined in the assessment plan, "drawn up as a coordinated effort among all affected government trustees, state and federal." Id. at 466. Trustees have the final choice of methodology and "all actions taken by potentially responsible parties to implement an Assessment Plan occur under the ultimate approval and authority of the authorized official acting as trustee." Id. at 467 (quoting 51 Fed. Reg. 27,704). The PRP thus functions "in a strictly ministerial role." Id. at 467.

4) The court upheld the DOI rule limiting assessment cost reimbursement to an amount not to exceed "the anticipated damage amount" as based on a rational principle of waste avoidance, as not inconsistent with statutory purpose. Id. at 468; 43 C.F.R. § 11.14(ee) (1987). The effect of the rule is to oblige a trustee to absorb that portion of the assessment costs which may exceed the limitation imposed by the rule.

5) The court upheld the "acceptance criteria" for determining the causal connection between a hazardous substance release and the injury to a biological resource (e.g., birds or fish) for which a trustee seeks damages. The statutory language is ambiguous. The court viewed the types of biological responses DOI deemed adequate to fulfill the criteria as strict, but still a reasonable attempt to meet the need for standardized natural resource damage assessment. Ohio, 880 F.2d at 472. The court also accepted as reasonable, albeit "unusually stringent," a requirement that the site-specific evidence to support the injury claim be corroborated in published scientific literature. Id. at 473. Petitioners failed to convince the court that the criteria are too burdensome, requiring "virtually absolute scientific proof of causation" exceeding common law evidentiary requirements, contrary to "CERCLA's purpose of liberalizing the traditional causation-of-injury standard." Id. at 469. The court nonetheless drew a distinction between two causation issues in support of its conclusion: that "between a responsible party and a hazardous substance release" and that "between a substance release and the biological injuries alleged to have resulted from it." Id. at 471.

6) DOI may impose audit procedures that states must adopt for "handling the proceeds from any natural resource damage claims." Id. at 474. Such standardization is "entirely consistent" with the CERCLA requirement that state trustees spend such funds "only on restoration, replacement or acquisition of equivalent resources." Id.

7) The absence of a punitive damages recovery option is appropriate, all indications being that Congress intended CERCLA to provide for compensatory damages only. Id.

8) The court upheld contingent valuation (CV) as an official use valuation methodology. Industry petitioners, asserting a single claim in the action, had challenged it as inconsistent with the "best available procedure" mandate of CERCLA relative to the rules. The court held that "it is in the mission of CERCLA to assess the public loss." Id.
scheme and . . . CERCLA’s decided emphasis on making polluters pay for restoration of spoiled resources.”

a. “Lesser-of” Rule

DOI required a public trustee claiming natural resource damages to select the lesser of (1) the diminution of use value resulting from the hazardous substance incident, or (2) the cost to restore or replace the resources to their baseline (pre-injury) condition. The court framed the “lesser-of” issue narrowly: “[W]hether DOI is entitled to treat use value and restoration cost as having equal presumptive legitimacy as a measure of damages.” The court held that DOI is not permitted “to draw the line on an automatic ‘which costs less’ basis,” and so rejected the rule.

DOI’s “lesser of” rule rested on two premises: “[F]irst, that the common-law measure of damages is appropriate in the natural resource context, and second that it is economically inefficient to restore a resource whose use value is less than the cost of restoration.” The court was persuaded that “Congress soundly rejected” the two premises after reviewing CERCLA’s legislative history documenting dissatisfaction with common law recoveries and the statutory language emphasizing restoration. DOI’s “economic efficiency” rational for the “lesser of” rule struck the court as merely a “cost-benefit” analysis. The court reasoned that “whether a particular choice is efficient depends on how the various alternatives are valued.” Congress undoubtedly intended that “CERCLA’s natural resources provisions . . . operate efficiently.” However, the “fatal flaw” in the DOI approach was that “it assumes that natural

at 477. Because contingent valuation measures option and existence values, non-consumptive values compensable under the terms of CERCLA (Id. at 475-76) and factors Congress intended to consider in the assessment of damages, the court saw nothing “arbitrary or irrational about the rebuttable presumption conferred upon . . . [the] methodology.” Id. at 480.

159. Id. at 449. The court instructed DOI that the agency’s “decision to limit the role of non-consumptive values, such as option and existence values, in the calculation of use values rests on an erroneous construction of the statute.” Id. at 464.


161. Ohio 880 F.2d at 443. Both petitioners and DOI had presented the issue as “what measure of damages must be applied in natural resources damages actions.” Id. at 442.

162. Id. at 444. “It seems strange . . . that Congress would single out one alternative measure of damages (restoration costs) and legislate specially to insure that interim use value damages would be added to it, at the same time it was content to let DOI set damages at the lowest amount calculable by any acceptable standard.” Id. at 448.

163. Id. at 455.

164. Id.

165. Id.

166. Id. at 456.

167. Id.

168. Id.

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resources are fungible goods, just like any other, and that the value to society generated by a particular resource can be accurately measured in every case—assumptions that Congress apparently rejected. 169

Congress did empower DOI to decide "at what point the presumption of restoration falls away." 170 For example, DOI may decide when restoration is infeasible or grossly disproportionate in cost compared to value. However, the primacy of restoration as the appropriate remedy may not be supplanted merely because its cost exceeds (by however little) the diminution in use value of the injured resource. 171 In addition to its statutory construction conclusions, the "enormous practical significance of the 'lesser of' rule" impressed the court. 172 The court ruled that DOI had drawn the rules too narrowly. 173 It found "no authorization for DOI to abandon Congress' strong preference for restoration, clearly expressed in two separate statutes [CERCLA and CWA] enacted within three years of one another." 174

169. Id. Congress did not view use value and restoration cost as "having equal presumptive legitimacy" because of skepticism "of the ability of human beings to measure the true 'value' of a natural resource.... [N]atural resources have value that is not readily measured by traditional means." Id. at 457.

170. Id.
171. Id.
172. Id. at 442.

A hypothetical example will illustrate the point: imagine a hazardous substance spill that kills a rookery of fur seals and destroys a habitat for seabirds at a sealife reserve. The lost use value of the seals and seabird habitat would be measured by the market value of the fur seals' pelts (which would be approximately $15 each) plus the selling price per acre of land comparable in value to that on which the spoiled bird habitat was located. Even if, as [is] likely, that use value turns out to be far less than the cost of restoring the rookery and seabird habitat, it would nonetheless be the only measure of damages eligible for the presumption of recoverability under the Interior rule.

Id. (footnote omitted).

173. The court also concluded that the "lesser of" rule is inconsistent with the Clean Water Act (CWA) to which the regulations also apply. DOI contended that "its 'lesser of' rule promulgated under CERCLA trumps the CWA standard." Id. at 450. The court disagreed. The CWA standard provides "that damages recoverable for releases of hazardous substances or oil covered by the CWA 'shall include any costs or expenses incurred by the Federal Government or any State government in the restoration or replacement of natural resources damaged or destroyed'.... Thus, the CWA expressly establishes restoration cost as the standard measure of damages." Id.

174. Id. "Such an unequivocal statement of purpose is irreconcilable with DOI's 'lesser of' rule, which would in a majority of cases risk underfunded, half-finished restoration projects." Id. at 454. Moreover, SARA (Superfund reauthorization of 1986) revised the phrasing of the "shall not be limited by" recovery language by splitting it into three sentences, to clarify Congressional intent that "the primary purpose of the resource damage provisions of CERCLA is the restoration or replacement of natural resources...
b. The Hierarchy of Assessment Methods

The DOI rules established a rigid hierarchy of methods for calculating lost use values. The rules required measurement by market valuation unless no competitive market or approximation of one exists. The Ohio court held that “market prices are not acceptable as primary measures of the use values of natural resources,” therefore “DOI erred by establishing a ‘strong presumption in favor of market price and appraisal methodologies.’” Contrary to that bias, the court viewed congressional intent to be that the regulations “capture fully all aspects of loss.” The rules as envisioned by Congress were to provide trustees with a “choice of acceptable damage assessment methodologies” reflecting “the most accurate and credible damage assessment methodologies available” so that compensation for injury from hazardous substances is as complete as possible.

While it is not irrational to look to market price as one factor in determining the use value of a resource, it is unreasonable to view market price as the exclusive factor, or even the predominant one. From the bald eagle to the blue whale to the snail darter, natural resources have values that are not fully captured by the market system.

In remanding the rules, the court advised DOI to “consider a rule that would permit trustees to derive use values for natural resources by summing up all reliably calculated use values, however measured, so long as the trustee does not double count.” The court rejected DOI’s “crabbed interpretation” of the statute. The court pointed out that “[o]ption and existence values may represent ‘passive’ use, but they nonetheless reflect utility derived by humans from a resource, and thus, prima facie, ought to be included in a damage assessment.” Although DOI may use reasonable judgment to rank methodologies as to their relative reliability, “it cannot base its complete exclusion of option and existence values on an incorrect reading of the statute.”

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damaged by unlawful releases of hazardous substances.” Id. at 454 (quoting H.R. Rep. No. 253(IV), 99th Cong., 1st Sess. 50 (1985)).
175. Id. at 463.
176. Id. (quoting 51 Fed. Reg. 27,720 (1986)).
177. Id.
179. Id. at 462-63.
180. Id. at 464.
181. Id.
182. Id.
183. Id.
C. Interim Assumptions

Until DOI rewrites the rules to comply with Ohio, there will be an interim period without official damage assessment rules in effect. A similar situation existed during the period of delay between the original deadline in 1982 for issuance of the rules and their actual promulgation in 1986 and 1987. At least one federal court rejected a defendant's contention at that time that a natural resource damages action was improper until the assessment procedures mandated by CERCLA were issued. Instead, the court held that adequate guidance for damages recovery was to be found in the statute itself and in existing case law, referring specifically to the recovery standard established in Colocotroni. Similarly now, at worst, the rebuttable presumption for trustee assessments may be suspended until DOI reissues the rules. Following Ohio, even more guidance for litigating such claims exists, so no moratorium need be imposed.

The emphasis on the public trust context, within which DOI must formulate natural resource damage assessment rules, begs the question of trustee duty. That context implicates the nature of a government trustee's responsibilities to the public and to the natural resources themselves. Even more intriguingly, the statutory provisions create the probability that trustees themselves may be liable for damages, and that the liability will be measured and apportioned under the very rules intended for use only by the public trustees themselves. The potential for conflicts of interest and dilemmas regarding satisfaction of judgments thus appears to be inherent in CERCLA's implementation.

IV. The Public Trust Concept in Environmental Law

The statutory language of CERCLA casts the assessment and recovery activities of federal and state governments in terms of an explicit trustee relationship. Yet, the statute does not define "trust-
As applied to CERCLA’s expansive definition of “natural resources,” the role and concept envisioned by Congress may or may not be co-extensive with the common law public trust doctrine.

The CERCLA requirement that natural resource damages recovered by trustees be used only to “restore, replace, or acquire the equivalent of such natural resources” suggests an analogy “to a trust of all publicly held natural resources to protect them against ‘injury, destruction, or loss’ from hazardous substances.” The emphasis in the language and legislative history of CERCLA, not the least of which is the preference for restoration cost as the measure of damages, supports the contention that the goal is to maintain the value of publicly held natural resources. In this emphasis, CERCLA continues the protective thrust of environmental legislation enacted in the 1960s and 1970s.

“the President, or the authorized representative of any State, shall act on behalf of the public as trustee of such natural resources to recover for such damages.” 42 U.S.C.A. § 9607(f) (West Supp. 1989) (emphasis added). The DOI rules provide “a procedure by which a natural resource trustee can determine compensation for injuries to natural resources.” 43 C.F.R. § 11.10 (1989). “Damages” in the rules are defined as “the amount of money sought by the natural resource trustee as compensation for injury, destruction, or loss of natural resources.” Id. § 11.14(i).


193. For example, the National Environmental Policy Act (NEPA) of 1969 created the environmental impact statement process “to force . . . [federal agencies] to become fully aware of the environmental impacts of the action it proposes before it commits itself to them. In this way NEPA’s purpose is that avoidable adverse environmental effects be foreseen and avoided.” M. BEAN, THE EVOLUTION OF NATIONAL WILDLIFE LAW 196 (1983).

The Congress, recognizing the profound impact of man’s activity on the inter-relationships of all components of the natural environment . . . and recognizing further the critical importance of restoring and maintaining environmental quality . . . declares that it is the continuing policy of the Federal Government . . . to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

42 U.S.C. § 4331(a) (1982 & Supp. 1989) (emphasis added). To carry out the policy, NEPA asserts:

[I]t is the continuing responsibility of the Federal Government to use all practicable means . . . to the end that the Nation may (1) fulfill the responsibilities
The public trust doctrine offers one mechanism for safeguarding diffuse public interests in natural resources. Three ideas which have "floated" through American public trust law intersect in the public trust doctrine and support the theory that special judicial attention is owed to interests in public resources. First, the availability of certain resources, such as access to navigable waters, is so intrinsically important that the alienability of those interests would impoverish one hallmark of a free society. Second, certain interests in nature's bounty ought to be reserved for the whole populace. The creation of national parks is one manifestation of that policy. Third, even where certain uses of resources are granted to private parties, government retains the right to regulate the use and circumscribe it for the general benefit of the community.

The development of statutory bases for protection and preservation of natural resources through damages recovery may affect the viability of the common law cause of action. Indeed, some commentators advocate abandoning the public trust concept altogether. Yet it is a persistent construct that has in fact expanded over time, adapting itself to changing national policies and priorities since its early, narrow origins. The doctrine has undergone three types of changes. The first is an expansion of scope, that is, the kinds of resources to which the concept has been applied. The second is a change in the conceptual basis on which the construct rests. The

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of each generation as trustee of the environment for succeeding generations; (2) assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradation . . . ; (4) preserve important historic, cultural and natural aspects of our national heritage and maintain . . . an environment which supports diversity and variety of individual choice . . . .

Id. § 4331(b) (emphasis added).

194. CERCLA and CWA expanded the scope of recovery for natural resources damages, and states retain authority to legislate even more restrictively than federal action if they choose. Yet statutory causes of action tend to narrow judicial discretion in setting damages. CERCLA does so through its assessment rules: A trustee's measure of damages due to oil spill or hazardous substance release is presumed to be the proper one if the assessment is carried out according to the rules, and the balancing of the benefit of an activity against the harm it causes is to some extent removed from the court and provided for in advance in the statute. The risk that adequate environmental protection will not be incorporated into the damages assessment process is illustrated by the recent experience with the DOI rules remand.

195. Sax, The Public Trust Doctrine in Natural Resources Law: Effective Judicial Intervention, 68 MICH. L. REV. 473, 484-85 (1970). One legitimate role of the courts is to force examination of the reallocation of public resources from broader to narrower uses, a change which frequently accompanies the exercise of private property rights which are contrary to the public interest. Id. at 565.
third is an evolution in the uses made of the doctrine. The incorporation of trust language into current legislation without elaboration on the meaning of the term permits the inference that the modern scope and uses of the public trust doctrine are being codified rather than abandoned.

A. Scope

The public trust doctrine began in Roman and English law as an implied property right in navigable waters and certain shores. The right was deemed to vest in the sovereign as a means of preserving public benefits such as free navigation for commerce and access for fishing. That category of public property was “distinguished from general public property which the sovereign could routinely grant to private owners.”

An early case, Illinois Central Railroad Co. v. Illinois, articulated the American manifestation of the common law doctrine. The Illinois Central court held that the state’s express conveyance in fee simple of submerged lands in Lake Michigan to the railroad was beyond the power of the legislature. Such a divestment was held to be an impermissible abdication of the state’s regulatory authority over navigation, a public interest protected by special sovereign obligations. The Court stated that the title under which Illinois held the navigable waters was:

[D]ifferent in character from that which the state holds in 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 interferences of private parties.

The Illinois Central principle is characteristic of the doctrine, which places public rights to some resources above purely local or private concerns. In modern contexts, the principle forces full and public consideration of a state’s interests in any action adversely affecting those traditional rights. The protection encompasses the broad

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196. See generally Sax, supra note 195.
197. Public trust law began narrowly as applicable to “that aspect of the public domain below the low-water mark on the margin of the sea and the great lakes, the waters over those lands, and the waters within rivers and streams of any consequence,” then public parklands. Sax, supra note 195, at 556.
198. Id. at 475. The “controversy and confusion” surrounding the doctrine’s manifestation in American law has been attributed to “the failure of many courts to distinguish between the government’s general obligation to act for the public benefit, and the special, and more demanding, obligation which it may have as trustee of certain public resources.” Id. at 478.
199. 146 U.S. 387 (1892).
201. Illinois Central, 146 U.S. at 452.
202. Sax, supra note 195, at 531. In his more recent commentary, while still pro-
spectrum of interests represented by the resources, preserved for a
diverse public, in light of the state's trustee relationship to them.\textsuperscript{203}

Since the early applications, "[c]ourts have steadily expanded the
public trust concept beyond application to submerged lands, the fore-
shore, and navigable waters to encompass injuries to parks, non-navig-
gable water, air, land, wetlands, ecological values, and water quan-
tity as well as quality."\textsuperscript{204} The convergence of various trends evident
in the courts resulted in a "generic" formulation "to describe the
public lands as being held in trust."\textsuperscript{205} Trust language permeates en-
vironmental case law when courts want to impress certain resources
with principles which will protect them for the well-being of the
community.\textsuperscript{206} By codifying federal and state trustee roles, CER-
CLA and CWA confer formal powers and obligations on govern-
ment as guardian of public natural resources, particularly in the ab-
dence of any private right of action for damages to public resources
and in the absence of standing to sue accorded the resources
themselves.\textsuperscript{207}

\section*{B. Basis of the Public Trust}

The government's trustee relationship to natural resources may be
founded in a constitution, a statute, or the common law. The public
trust may attach to land, water, or other resources, by implication or
by virtue of original dedication for specific purposes.\textsuperscript{208} Grounds for

\begin{itemize}
  \item \textsuperscript{203} Moting the doctrine, Sax characterizes it as substantive rather than "technique" as he
    had in his earlier work, and admits its operation as squarely rooted in property law with
    judicial standards analogous to private property rights in its application. Sax, Liberating
    the Public Trust Doctrine from Its Historical Shackles, 14 U.C. Davis L. Rev. 185,
    188-89 (1980).
  \item \textsuperscript{204} Wilkinson, The Public Trust Doctrine in Public Land Law, 14 U.C. Davis L.
    Rev. 269, 316 (1980).
  \item \textsuperscript{205} Anderson, supra note 3, at 413.
  \item \textsuperscript{206} Wilkinson, supra note 203, at 304.
  \item \textsuperscript{207} Nonetheless, "[t]he public trust doctrine does not exist to allow judges to act
    as roving ambassadors on behalf of a 'public' consisting mainly of environmentalists. Rather
    the doctrine protects the resources themselves." Id. at 315-16.
  \item \textsuperscript{208} J. Macdonald & J. Conway, Environmental Litigation 97, 98 (1972).
\end{itemize}
asserting the doctrine have evolved from an emphasis on property rights to an emphasis on police power as the source of trustee authority.209 That change in emphasis from a proprietary construct to a sovereign function carries with it a change in the construction of duties owed to the public. Under a police power or regulatory construct "rulemaking is required, records are open, decision-making is shared, and the courts are available because public lands business is public business. It is the public to whom public lands managers are ultimately accountable."210 The sovereign retains supervisory authority even over conveyances of trust resources to private parties, and "private property rights in the resource are 'impressed' with the public trust, fee simple notwithstanding."211

Legislative developments since 1970212 have incorporated new public policy concerns regarding natural resource holdings. Those developments fuel the contention that the public trust concept is an

value of fish killed by chemical discharges on grounds that the state lacked property interests in free-swimming fish (Id. at 25-26), such holdings restricting states' rights to regulatory ones appear to ignore that the regulatory authority derives from the state's historical position as trustee. Id. at 27. See Maryland Dept. of Natural Resources v. Amerada Hess Corp., 350 F. Supp. 1060 (D. Md. 1972); see also infra note 230 (discussion of Amerada Hess).

209. Sax, supra note 195, at 484.

210. Wilkinson, supra note 203, at 304. This shift is virtually complete. The fiction of sovereign "ownership" of wild animals, for example, is a largely discredited concept after having exercised historical sway with the judiciary. The Supreme court had subscribed to the ownership theory regarding wildlife until fairly recently. See, e.g., Toomer v. Witsell, 334 U.S. 385 (1948). In Toomer, the Court referred to the "technical ownership" a state has of its resources and from which it derives a legal right to pursue an action for damages as trustee for its citizens.

See also, e.g., Geer v. Connecticut, 161 U.S. 519 (1896). Geer established long-standing precedent for that concept. The Court upheld a statute prohibiting the removal of legally captured game birds for sale outside the state because a state's proprietary interest in fish and wild game within its borders sufficed to accord the state authority to regulate subsequent ownership of the captured wildlife. "The common ownership imports the right to keep the property, if the sovereign so chooses, always within its jurisdiction for every purpose." Id. at 530.

But see Hughes v. Oklahoma, 441 U.S. 322 (1979). The Hughes Court expressly overruled Geer. Id. at 325. Like Geer, Hughes involved a challenge under the commerce clause to a state statute. The Court dismissed the ownership theory, eliminating any special proprietary doctrine which sets fish and wildlife apart from other natural resources over which a state exercises regulatory authority. The ownership theory is "no more than a 19th-century legal fiction expressing 'the importance to its people that a State have power to preserve and regulate the exploitation of an important resource' . . . . Under modern analysis, the question is simply whether the State has exercised its police power in conformity with the federal laws and constitution." Douglas v. Seacoast Products, Inc., 431 U.S. 265, 284 (1977) (quoted in Hughes, 441 U.S. at 335). However, the Hughes Court expressly validated the legitimacy of "state concerns for conservation and protection of wild animals." Hughes, 441 U.S. at 336.

211. Lazarus, supra note 190, at 655 n.157-60.

212. E.g., creation of the Environmental Protection Agency (EPA) and the implementation of the National Environmental Policy Act of 1969 (NEPA) requirements that Environmental Impact Statements precede developments likely to impact natural resource holdings.
anachronism which should be phased out of environmental law.\footnote{213} The historical need for such a theory as the source of government authority to restrict private activity deemed contrary to the public interest is arguably supplanted. New bases for action that are more responsive to current social values and to the characteristics of the resources themselves, "from federal environmental protection statutes and new state resource allocation laws to evolving common-law principles of tort law,"\footnote{214} displace the need for a public trust doctrine.\footnote{215}

Moreover, the argument continues, expansion of government oversight functions undercuts the early premise of the trust doctrine as "a needed legal basis to ensure public accountability for governmental decisions that adversely affect the environment."\footnote{216} Since the 1960s, Congress has increasingly imposed procedures on administrative agencies charged with implementing statutes. The result is a significant transformation of agency decisionmaking processes and accountability. Courts strictly enforce public participation requirements and make it easier for private citizens to seek judicial review of agency decisions.\footnote{217} Judicial scrutiny extends not only to agency actions, but also to agency inactions. Such developments, the argument goes, render the public trust doctrine unnecessary as a means of preventing needless environmental degradation\footnote{218} and in-
consistent with emerging legal alternatives. The doctrine's roots are in a past devoid of watchdog agencies such as the Environmental Protection Agency, the Fish and Wildlife Service, and the National Oceanic and Atmospheric Administration.

Actually, "[m]ost commentators agree that the common law is a seriously flawed system for providing general environmental redress" because it is "too narrow to deal comprehensively with the community-wide disruptions typical of environmental degradation." Furthermore, current statutory causes of action, like those available under CERCLA, provide easier routes to damages recoveries through the imposition of strict, joint and several liability, the relaxation of evidentiary barriers, and the expanded definition of PRP's. Such observations are persuasive, but only when the government is (or ought to be) the plaintiff. Exclusive reliance on statutory remedies is only reassuring if the codified authority and obligations are at least as comprehensive as at common law.

Despite arguments to the contrary, the persistence of trust language belies the demise of the concept in environmental law, whether one looks at case law or at the very legislation which critics assert supplants the trust notion. These signs suggest instead an evolution of the doctrine from its narrow origins to a more expansive construct, the latter infused inevitably with a long tradition of judicial recognition and enforcement. Enacted law is a process, as are the emerging environmental problems it must address, such as acid rain, new toxic wastes, and new ways in which old hazards are infiltrating and injuring natural resources. Until the law is comprehensive in its treatment of environmental problems, the availability of a theory impressed with precedent is a valuable tool for injunctive relief or damages, inasmuch as hazardous substances often create particularly pressing needs for immediate action.

Furthermore, as government itself becomes increasingly vulnerable to liability for natural resource damages, flexible theories of recovery serve a legitimate public interest. Surely a common law public trust doctrine refined in scope and application, perhaps by the very statutes some argue ought to displace it, remains a viable and valuable

The argument against retention of a public trust concept asserts that the doctrine has eroded along with traditional concepts of absolute private property rights in resources. Lazarus, supra note 190, at 701. Advocates of resisting "the tremendous mystical and romantic appeal" of the doctrine, point to recent judicial opinions to bolster their contention that "any special legal status the trust rationale has enjoyed in the past is waning." Id. at 701, 710, 713 n.470. These advocates want natural resources law to become "properly fused with and into modern notions of tort and property law." Id. at 715. They view this process as requiring a "strategic retreat from the public trust doctrine." Id. at 710.

Anderson, supra note 3, at 421 & n.70.
source of procedural and substantive rights as an alternative theory available to trustees and citizens alike. Its incorporation, even if metaphorically, into environmental legislation suggests that the concept retains power to force accountability and action.

C. Evolution of Trust Concept Uses

Judicial application of the public trust doctrine has changed over time, paralleling the evolution of public policy concerning natural resources. The original emphasis recognized rights in government, particularly the states, to act on behalf of citizens to manage public holdings. Since the 1970s, the emphasis has been less on upholding government actions than on constraining them.220

Three periods of change have molded the public trust doctrine in the United States. First, in the 19th century, while the public trust doctrine still applied primarily to navigable waters,

[t]he inland public lands and resources were used as inducements to subsidize the opening of the West. Ranchers were allowed to graze their stock on the open public domain at no cost. . . . Free land was made available to settlers. . . . Timberlands were available for homesteading and through railroad land grants. Public minerals, water and wildlife were readily available to the first takers. . . . [T]he General Land Office existed almost exclusively to divest the United States of land and resources—not to manage them.221

The traditional trust doctrine “became as much a legal basis for economic expansion as for resource protection.”222

Then, during the late 19th and early 20th centuries, Congress began to move toward a policy of reserving land rather than divesting its holdings:

Some land was set aside from development to be held for future generations. . . . [R]ange and timber resources were more actively managed on a

220. That is, the direct or indirect use of the public trust doctrine to limit federal power and to justify rights of the public against the government. . . . Specific statutory authority to sue for damages to natural resources has replaced the need to rely exclusively upon common law theories of recovery, but the latter have not been eliminated as alternative causes of action. The heart of the public trust doctrine, however it may be articulated, is that it imposes limits and obligations on governments.

Wilkinson, supra note 203, at 284 & n.60.

221. Id. at 294-96 (footnotes omitted).

222. Lazarus, supra note 190, at 641. This trend manifested itself in urban environments as well. Examples include state court rulings supporting use of subsurfaces for city infrastructures such as sewer and gas lines, and further use of the trust concept in its historical sovereignty garb to allow growing cities like Los Angeles to control water to meet the needs of the inhabitants. Id.
Finally, during the 1960s and 1970s, the pressures on natural resources became increasingly apparent. In response, Congress adopted a third approach to management strategy. The National Environmental Policy Act (NEPA)\textsuperscript{224} of 1970 inaugurated a series of legislative actions to protect the environment, from wilderness legislation to coal leasing. The new environmental legislation codified mechanisms such as long-range planning, citizen involvement, and interdisciplinary coordination. This evidence substantiates the contention that "Congress has turned four-square from a policy of disposition to a policy of retention."\textsuperscript{225} The notion of a public trust in natural resources carries a duty "to protect the peoples' common heritage" in them, not merely the power "to use public property for public purposes."\textsuperscript{226} Throughout the 1980s, courts continued to validate the affirmative duty incumbent on sovereign trustees, and displayed an unwillingness to discard the public trust doctrine despite abandonment of the theory that it is founded in ownership of the public natural resources.\textsuperscript{227}

Thus, public policy began with the idea that federal natural resources should be granted to the states for growth and expansion or sold to enhance the public treasury. The trust concept was invoked to validate government disposition of natural resource holdings which it did not "own."\textsuperscript{228} As tentative protection and management policies...

\footnote{223. Wilkinson, \textit{supra} note 203, at 296.}
\footnote{225. Wilkinson, \textit{supra} note 203, at 297.}
\footnote{227. States and the federal government have been found to have "the right and the duty to protect and preserve the public's interest in natural wildlife resources." \textit{In re Steuart Transp. Co.}, 495 F. Supp. 38, 40 (E.D. Va. 1980), \textit{quoted in McIntyre, \textit{supra} note 227}, at 1027.}
\footnote{228. \textit{Parens patriae} ("parent of the country") is a second common law theory available to states. In the United States, the theory has been construed to permit the state to assert quasi-sovereign interests, such as environmental interests, in a suit for...}
emerged, the trust concept was invoked to assert governmental regulatory authority over the holdings it retained. Finally, modern public policy is embodied in the statutory premise that "public resources are to be nurtured and preserved; that the public is to play a measured but significant role in decision making; and that the lands and resources are to be managed on a sustained-yield basis for future generations."229

damages, as long as the interests asserted are separate and independent of any interest individual citizens of the state may have a right to assert. Hayes & Evans, supra note 209, at 28.

For example, the court in Maine v. M/V Tamano, 357 F. Supp. 1097 (1973), held that the state was the proper plaintiff to bring an action for additional values lost, beyond those claimed by clam diggers for their lost profits, when the open-access portions of a shellfish resource were destroyed by an oil spill. The claims were independent of those asserted by private citizens. The court held that the state properly asserted its claim under the parens patriae theory, bringing action on its own behalf rather than on behalf of particular citizens. The court concluded that case law establish[es] that the right of a State to sue as parens patriae is not limited to suits to protect only its proprietary interests; a State also may maintain an action parens patriae on behalf of its citizens to protect its so-called "quasi-sovereign" interests. . . . A quasi-sovereign interest must be an interest of the State "independent of and behind the titles of its citizens" . . . that is, . . . the State "must show a direct interest of its own and not merely seek recovery for the benefit of individuals who are the real parties in interest."

Tamano, 357 F. Supp. at 1099-100 (quoting Oklahoma v. Cook, 304 U.S. 387, 396 (1938)). Although the court adopted the language of the state's ownership interest in resources it also asserted the right of states to sue under the theory for non-proprietary interests. In the court's view, parens patriae will support the maintenance of a suit for damages brought by states for natural resource damages since the proprietary interest was not a limiting factor in the decision. Although the Tamano court viewed Supreme Court decisions as implying that a suit parens patriae will support an action for damages as well as injunctive relief, barring some substantive impediment, that is not a settled issue. Id., 357 F. Supp. at 1101. "Perhaps for this reason, about sixty percent of the states have authorized actions for money damages for injury to fish and wildlife." Anderson, supra note 3, at 413, referencing Halter & Thomas, supra note 4, at 10.

Parens patriae and public trust concepts are not interchangeable. An illustration of the distinction is that a state might assert its standing to sue as parens patriae rather than as trustee, but would be able to assert the parens patriae right of standing because of its traditional role as "trustee" of that infringed interest. "Thus, the public trust doctrine is a much broader and more pervasive concept, and, although it must serve as a basis for a parens patriae action for wildlife recovery, the reverse is not true, for an action as trustee can be maintained without reference to parens patriae." Hayes & Evans, supra note 208, at 28. Furthermore, the trust doctrine has been used as a basis for affirmative regulation, whereas parens patriae, a concept primarily of judicial standing, probably could not be so used. Id.

229. Wilkinson, supra note 203, at 299. The U.S. Forest Service recently provided further evidence of this trend. In the wake of complaints from Western forest supervisors that "current policies force them to sacrifice the environment to meet unrealistic harvest levels," and scientific challenges to lumber industry assertions that "cutting old trees and planting new ones eases the so-called greenhouse effect", and efforts to reduce the clear-cutting logging method, the Forest Service announced it will "fundamentally change
Judicial opinions have paralleled this evolution. The trust concept appears in modern common law as imposing an affirmative duty to recover for damaged natural resources. The persistent judicial allusion to the trust concept arises even in cases brought under statutes. The analogy is explicit in Colocotroni, where the district court cast the recovery in terms of "reimbursing" the trust for "the diminution attributable to the wrongdoers." Environmental legislation

management policies for national forests in California." L.A. Times, Feb. 9, 1990, at A3. “While the national forests . . . must continue to . . . [produce] natural resources we consume . . . we will strive for better balance in our program.” Plans include augmenting designated wilderness area. Id.

En route toward the modern view of the public trust, government increasingly used the doctrine to expand its "sovereign authority over natural resources covered by the doctrine." Lazarus, supra note 190, at 655. “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 been done, to sue for monetary relief.” Id. at 656, n.161, n.162. CERCLA codifies such authority.

Common law causes of action for natural resource damages recovery are not precluded by hazardous substance legislation. Maryland v. Amerada Hess Corp., 350 F. Supp 1060 (D. Md. 1972) demonstrates how the public trust doctrine and environmental legislation are interrelated. The Amerada Hess court recognized the state's right to recover the value of fish and wildlife wrongfully destroyed due to an oil spill in Baltimore Harbor, as an action to compensate an injured trust corpus. The court rejected the defendants' argument that the state as a "mere trustee" of natural resources lacked a proprietary interest in the resources on which it could found a suit, and that by not enacting any legislation for statutory damages actions under its regulatory authority, the state had no standing to sue. The court held that the state had the right to bring a common law suit on behalf of its citizens because it "would violate common sense" to prohibit a state from pursuing an action at common law to achieve a purpose it could concededly accomplish by legislation: "[I]f a State . . . has the power to legislate regarding a given subject matter, does it not follow that the state . . . has the inherent power to protect the public welfare by bringing common law suits which seek to attain the same result as that which legislation would seek to accomplish?" Id. at 1066-67. In addition, "[t]he conclusion seems inescapable to this Court, that if the State is deemed to be the trustee of the waters, then, as trustee the State must be empowered to bring suit to protect the corpus of the trust . . . for the beneficiaries of the trust." Id. at 1067.

The New Jersey Superior Court, shortly after the Amerada Hess decision, cast a state's parens patriae right to sue in terms of its trustee status. The court's views on the trustee issue are revealing, even though the original holding was ultimately reversed. State Dep't of Envtl Protection v. Jersey Cent. Power & Light Co., 125 N.J. Super. 97, 308 A.2d 671 (1973), aff'd, 133 N.J. Super. 750, cert. granted, 68 N.J. 161, 343 A.2d 449 (1975), rev'd, 69 N.J. 102, 351 A.2d 337 (1976). The state sought the value of fish killed when an electric power company caused a drop in temperature in a creek by suddenly shutting down its condensers which were cooled by water from a canal flowing into the creek. The defendants contended that the State lacked proprietary interest in the fish killed, therefore an action for damages was precluded. The court rejected the argument that the State's remedy was limited to injunctive relief to protect the trust corpus. "The court agrees with the reasoning expressed in Maryland v. Amerada Hess. . . . The State has not only the right but also the affirmative fiduciary obligation to ensure that the rights of the public to a viable marine environment are protected, and to seek compensation for any diminution in that trust corpus." Id. at 674 (emphasis added). It "would be unreasonable and injudicious to impose the fiduciary duties of a trustee upon the State while withholding the ability to have the corpus reimbursed for a diminution attributable to a wrongdoer.” Id. at 673-74.

affirms both trustee authority and trustee obligations vis-a-vis natural resources, including provisions for citizen intervention in legal actions affecting decisions involving public holdings.

V. TRUSTEE LIABILITY FOR PUBLIC NATURAL RESOURCE DAMAGES

For a public trust doctrine to function meaningfully as a modern tool for "a comprehensive legal approach to resource management problems," one commentator identified three criteria which the doctrine must possess: "It must contain some concept of a legal right in the general public; it must be enforceable against the government; and it must be capable of an interpretation consistent with contemporary concerns for environmental quality." The doctrine's enforceability against the government became important as its applications shifted from use as a tool primarily in the exercise of government power to one available as a check on government actions as well. It was invoked by citizens and applied by courts "to impose enforceable restrictions on the authority of the sovereign to act in a manner potentially harmful to the trust resource." Using the doctrine, courts questioned the validity of agency decisions that compromised trust resources. In particular, courts scrutinized agency decisions which limited public access to those resources, using techniques such as narrow readings of legislative delegation of authority over the resources.

When the issue is natural resource injury for which the government trustee is responsible, a logical extension of the theory is to use trustee obligations as the basis for establishing liability to forcing restoration. Citizens may have a right to bring an action under the public trust theory. As some commentators contend,

From the declaration of a common-law right on the part of the state to sue on behalf of its citizens, it can logically be argued that if there is any authority in the state allowing a suit on behalf of the public, any citizen can

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233. Sax, supra note 195, at 474.
234. Id.
235. Lazarus, supra note 190, at 650.
236. Advocates of the doctrine suggest:
[A] court [could] begin with a presumption that the public interest is best served by preserving to the general public the beach and wildlife values threatened [for example] by oil and gas operations. The utilization of that presumption would thrust upon the proponents of a different allocation the burden of proof and persuasion. Such a shifting of burden would be a court's contribution to the equalization of political power . . . .

Sax, supra note 195, at 546 n.228.
All legislation charging government officials with administering the public interest confers broad trustee-like status. Yet, routine administration of public natural resources may involve no imposition of special fiduciary duties. In contrast, use of the trust concept in the CERCLA legislation creates far-reaching authority for both federal and state governments: CERCLA calls the officials "trustees;" the statute imposes affirmative duties; government standing to sue to protect the trust corpus is explicit (and exclusive); and procedures for maximizing recoveries are mandated. In such circumstances, "the trustee is not an ordinary government official; a trust is not a routine management tool." Even so, the allocation of trust duties under CERCLA creates an interrelationship and potential overlap among states, or between a state and the federal government, in a given recovery action. The DOI rules designate either or both as having standing to conduct damage assessments and to initiate actions, and merely advocate coordination of efforts among the trustee agencies, with a "lead official" to be selected based on the jurisdiction (federal or state) where the resource is located. Under CERCLA, PRP liability is to both the affected state government and the federal government. How the trust "reimbursement" should be allocated and administered is not clear.

A modern public trustee, therefore, assumes dual obligations. First, such a trustee is the custodian of natural resources to be managed, protected, and restored when damaged. Second, the trustee is accountable as a responsible party should the trustee be the cause of harms to the resources. The implications of trustee liability raise practical and conceptual questions when the role is codified, as in CERCLA. A sampling of potential problems includes the overlap of federal and state trustee obligations; the rights of citizens to force action by trustees through intervention in civil actions for damages; and the mechanisms for satisfying potential judgments against government entities as PRP's for natural resource damages.

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238. Anderson, supra note 3, at 414.
239. Id.
241. Federal and state trustee authority differs historically. The public trust doctrine at common law attached to state authority over specific kinds of public natural resources. See generally Lazarus, supra note 190. The federal government's public trust authority derives from "organic legislation for parks, forests, and public lands." Anderson, supra note 3, at 413. The existence of federal government trust duties is assertedly entirely dependent on statute. See, e.g., Sierra Club v. Andrus, 487 F. Supp 443, 449 (D.C. Cir. 1980) (holding that any federal trust duties must be statutorily conferred); see also Wilkinson, supra note 203, at 290-91. However, case law does not provide "a definitive resolution of these public trust issues." Id. at 293.
A. Private Rights of Action

Public trustees may be negligent or may mismanage the duties they owe to the natural resource holdings on behalf of the public. These failings, including failure to adequately pursue compensation for injury, ought to be actionable against the government. CERCLA provides that government affiliation with the offending hazardous substances or release incident renders the government amenable to suit. Nonetheless, it is unclear how such a process will work despite the explicit inclusion of government as a PRP, because only public trustees are empowered to bring suit for public natural resource damages under the Act.

Because the concept of a trustee of natural resources is specifically legislated by Superfund, with the broad implied fiduciary obligations that accompany the trust relationship as it exists throughout Anglo-American law, one may ask whether the trustee owes obligations toward natural resources—the corpus of the trust—that are not spelled out in Superfund. Like bank officials who are liable to beneficiaries for their mishandling of trust funds, a natural resource trustee’s failure to perform fiduciary duties toward resources may be actionable at the instance of private citizens, the beneficiaries of the trust. Arguably, section 310 of Superfund (the citizen’s suit provision) affords a basis for such action.242

The citizen suit provision allows “any person” to “commence a civil action on his own behalf” against the President or any other U.S. officer for “alleged . . . failure . . . to perform any act or duty” under the chapter,243 with relief to include “any civil penalty for the violation.”244 Private parties are not empowered by CERCLA to seek monetary recoveries against the government or any other PRP for public natural resource damages. Nonetheless, the citizen suit provision, coupled with the codified trustee status of government (undiminished presumably by any simultaneous PRP designation), might be imaginatively applied to force actions for restoration of resources injured or destroyed by hazardous substance releases.

1. Intervention

CERCLA does not authorize private parties to seek damages directly for public natural resources injuries.246 The government (state

244. Id. § 9659(c).
245. Certain federal causes of action are preempted by environmental legislation. For example, “The Supreme Court readily rejected a claim for private damages in Sea Clammers [Middlesex County Sewage Authority v. National Sea Clammers Assn., 453 U.S. 1 (1981)] because ‘the federal common law of nuisance in the area of water pollu-
or federal), "acting as trustee," is solely empowered to seek such recoveries. However, if citizens or environmental groups perceive inadequacies in the government's handling of the process, they may intervene in the government's suit. In re Acushnet River & New Bedford Harbor provides an illustration of that intervention right. In that case, the National Wildlife Federation (NWF), also a party in the Colorado and Ohio cases, moved to intervene in the federal and state governments' ("the sovereigns") CERCLA action against harbor polluters. The NWF asserted that the proposed consent decree between the sovereigns and defendant AVX Corporation provided inadequate damages to compensate for the effects of defendant's release of polychlorinated biphenyl (PCB) contaminants into the harbor. The estimated damages exceeded $50 million; the government negotiated a settlement proposal with the defendant in the amount of $2 million.

The case began in 1983 when the United States and the Commonwealth of Massachusetts brought an action as natural resources trustees seeking recovery for damages to New Bedford Harbor. The sovereigns claimed damages for the diminished value of the resources and their lost use over time. By 1989, the sovereigns and AVX had negotiated a Partial Consent Decree to settle AVX's liability for its role as owner and operator of the source of the PCB's, a manufacturing plant adjacent to the harbor. The sovereigns had established in the Colorado and Ohio cases, moved to intervene in the federal and state governments' suit.


The rights of citizens to pursue private causes of action for their own property and health damages from hazardous substance releases are beyond the scope of this Comment. They are preserved in the language of CERCLA: tort actions in trespass, nuisance, negligence, etc. remain available to injured parties who can establish the respective elements. In addition, CERCLA legislation authorizes citizen suits for recovery of some response and cleanup costs from the responsible private parties or against Superfund itself. Injunctive relief is also available to private citizens. Many citizen actions against private corporations have resulted in settlements. See L. JORGENSON & J. KIMMEL, ENVIRONMENTAL CITIZEN SUITS: CONFRONTING THE CORPORATION (BNA Special Report, 1988). The citizen suit provisions under CERCLA appear at 42 U.S.C.A. § 9659.


249. "[T]he United States and the Commonwealth are suing, albeit under a statute, for injury to the property over which they hold trusteeship . . . for the value of the natural resources damages that are forever lost, the value of the lost use of such resources over time and the costs of assessing how much is lost forever or how much lost use there has been over time ('natural resource damages'). . . ." Acushnet, 712 F. Supp. 994, 1000 (D. Mass. 1989).
sentially applied the DOI "lesser of" rule in negotiating the settlement.\textsuperscript{269} NWF sought to intervene, objecting to the proposed settlement on the grounds, among others, that the measure of damages was inappropriate. NWF asserted that the "correct measure . . . is . . . the cost of restoration or replacement of the natural resources, or failing that, of the acquisition of equivalent resources, \textit{plus} the lost use value,"\textsuperscript{281} the same arguments with which NWF prevailed in \textit{Ohio}. The \textit{Acushnet} court held that the sovereigns no longer represented NWF interests: "[T]he substantial divergence of views on the proper measure of damages . . . necessarily renders the former's representation of the latter inadequate."\textsuperscript{282} The court rejected the sovereigns' claim that intervention was inappropriate because their ultimate goal and that of NWF were the same, with only the means differing.\textsuperscript{283} The court held that the "substantial difference in possible recoveries under the . . . [divergent] theories of damages" [would] profoundly affect the ultimate quality of the harbor,\textsuperscript{264} so that NWF intervention was justified.\textsuperscript{258}

Under the \textit{Acushnet} precedent, public trustees are accountable for their proposed settlements for natural resource damages in CERCLA actions. Their conduct of the process is open to challenge by the public. The case establishes that citizens who are successful in demonstrating a trustee's inadequate representation of cognizable interests may intervene and block the finalization of natural resource damages settlements which the government has negotiated with responsible parties.

\textsuperscript{250} \textit{Acushnet}, 712 F. Supp. at 1024. Although the DOI natural resource damage assessment rules are not expressly named in the opinion, the court's analysis of the competing measurements and standards describes the contested "lesser of" rule. \textit{Id.} n.7; see \textit{infra} notes 161-75 and accompanying text.

\textsuperscript{251} \textit{Acushnet}, 712 F. Supp. at 1024.

\textsuperscript{252} \textit{Id.} NWF sought "to represent the interests of its members who live in the New Bedford Harbor area." \textit{Id.} at 1022.

\textsuperscript{253} \textit{Id.} at 1024.

\textsuperscript{254} \textit{Id.}

\textsuperscript{255} Specifically, the NWF gained the right to brief and argue four categories of issues: (1) "[T]he legal requirements applicable to any proposed consent decree"; (2) "the appropriate measure of natural resources damages under CERCLA"; (3) "the legal requirements for cleanup under CERCLA"; and (4) other issues allowed by the court. \textit{Id.} at 1023. Moreover, NWF had the explicit right to "take an appeal from a judgment it views as adverse" on the other items. \textit{Id.}
2. Contribution

CERCLA explicitly includes states in the definitions of PRP and "person."\textsuperscript{256} The contribution provision of the statute permits "[a]ny person . . . [to] seek contribution from any other person who is liable or potentially liable under section 9607(a) of this title."\textsuperscript{257} SARA explicitly incorporated a right to contribution\textsuperscript{258} and left "[t]he substantive law of contribution under CERCLA . . . to the federal courts to define."\textsuperscript{259} Thus, all responsible parties may be required to share in damages. The expansion of liability under CERCLA made it likely that other responsible parties would seek to hold government trustees responsible parties accountable just like themselves.\textsuperscript{260}

When the party seeking contribution is a private party and the party from whom contribution is sought is a state, implementation of liability apportionment is complicated by issues of sovereign immunity. A recent Supreme Court decision, \textit{Pennsylvania v. Union Gas},\textsuperscript{261} addressed the matter of contribution under CERCLA in such instances. The issues in \textit{Union Gas} were whether CERCLA permits the pursuit of monetary damages against a state in federal court and, if so, whether the creation of such a cause of action is within congressional authority. Although the case treats only recovery of clean-up costs, the contribution provision in the statute applies to all of the liability provisions in the section, where the natural resource damages provisions are also found.\textsuperscript{262} The \textit{Union Gas} Court did not limit its holding to actions under the cleanup cost provisions alone.\textsuperscript{263}

\textsuperscript{257} \textit{Id.} § 9613(f)(1).
\textsuperscript{258} \textit{Id.} § 9613(f).
\textsuperscript{259} Garber, \textit{supra} note 39, at 387.
\textsuperscript{260} Under pre-amendment CERCLA, "contribution either was inferred from the language of the statute or was found necessary to protect a . . . set of federal interests underlying the statute." \textit{Id.} at 371. At common law, "[t]he doctrine of contribution allows a settlor who has paid all or a portion of a judgment to seek contribution from other jointly and severally liable parties . . . [A] settlement by the plaintiff with one or more joint tortfeasors does not release the settling defendants from contribution . . . [therefore] the common law rule discourages the settlement of cases because the defendant settlor remains potentially liable for contribution." \textit{Acushnet}, 712 F. Supp. at 1024 n.9.
\textsuperscript{261} 109 S. Ct. 2273 (1989).
\textsuperscript{263} CERCLA, as amended by SARA, clearly holds the States liable for damages in private suits. The inclusion of States, apparently for \textit{all purposes} within the definition of "person" reinforced by the language of the limitation that assumes state liability equivalent to the liability of private individuals, leaves no fair doubt that States are liable to private persons for money damages.

109 S. Ct. at 2296 (Scalia, J., concurring) (emphasis added). Some observers view the extension of statutory liability under CERCLA as settled: "The courts and EPA today maintain that [PRP's] are strictly, jointly and severally liable for cleanup or its costs.
Pennsylvania had acquired from the owners of a coal gasification plant an easement to perform flood-control work along a creek. While excavating, the state struck a coal tar deposit, a by-product of the plant operations. The tar seeped into the creek, necessitating clean-up of the hazardous substance, a task performed jointly by the state and federal governments. The site was Superfund's first project. The state received $720,000 from the federal government as compensation for its clean-up costs. The federal government then sued Union Gas to recoup the expenditure. Union Gas asserted that Pennsylvania fell within the "owner or operator" definition of liable parties under CERCLA and had caused or contributed to the release of tar into the creek. On this theory, Union Gas filed a third-party complaint against Pennsylvania to establish the state's responsibility for at least part of the costs. The Court of Appeals held that states are liable for monetary damages and that Congress has the power to establish such liability when legislating under the commerce clause.

The Supreme Court affirmed these holdings in its plurality opinion. The Court recognized the power of Congress to override the eleventh amendment grant of sovereign immunity to the States when acting under its fourteenth amendment powers and when it makes "its intent to do so 'unmistakably clear'." The SARA amendment provides this clarity by defining liable parties to include governments. Consequently, the Court concluded that CERCLA "clearly

This liability applies as clearly to natural resource cleanup, restoration, and damages as it does to site and spill cleanup on private property." Anderson, supra note 3, at 427.

264. 109 S. Ct. at 2276.

265. Id. at 2277.

266. The District Court initially dismissed the complaint and the Appeals Court affirmed, "accepting Pennsylvania's claim that its Eleventh Amendment immunity barred the suit . . . [because the courts found] no clear expression of congressional intent to hold States liable in monetary damages under CERCLA." Id. However, SARA was enacted while Union Gas' petition for certiorari was pending, and the SARA amendments incorporated explicit contribution language into CERCLA. On remand, the Appeals Court upheld state liability for monetary damages under the amended statute. Id.

267. Id. The Court found additional support for its holding that sovereign immunity will not insulate governments from liability for damages under CERCLA in the statutory language which "unequivocally" expresses the Federal Government's waiver of its own sovereign immunity. Id. at 2279; 42 U.S.C.A. § 9620(a)(1) (West Supp. 1989). The circumstances of this case did not qualify Pennsylvania to take advantage of an "exclusion" category provided by the statute. The Court relied on both the text of the statute and premise that the United States would need no statutory grounds to sue a state as grounds to reject Pennsylvania's claim that any liability of a state under the statute would be solely to the United States, not to private citizens. 

"[L]awsuits [may be] brought by the United States against a State . . . just like 'any non-governmental entity.'" Union Gas, 109 S. Ct. at 2279. If the Act's intent had been to limit states'
permits suits for money damages against States in federal court," and the commerce clause supplies the waiver of states' immunity from suit for damages in such a case.

Problems of environmental harm are often "not susceptible of a local solution" and "we often must look to the Federal Government for environmental solution. Often those solutions, to be satisfactory, must include a cause of action for money damages." Congress' solution in CERCLA was a sweeping one intended to hold "everyone who is potentially responsible for hazardous-waste contamination" liable for contribution to rectify the injury. The plurality characterized Union Gas as "brilliantly" illuminating the reasons "why the space carved out for federal legislation under the commerce power must include the power to hold States financially accountable not only to the Federal Government, but to private citizens as well." The precedent is set for the argument that government trustees, as responsible parties under CERCLA, may be held liable for their share of monetary damages, and that they may be sued in federal court for contribution.

**B. Implications of Trustee Liability for Restoration Costs**

*Union Gas* confirms the principle that trustees are liable to private parties for monetary recoveries in actions brought by co-PRP's under CERCLA for hazardous substance remedial costs. Whether this amenability to suit for contribution will be upheld in an action for natural resources damages beyond cleanup and remedial costs remains to be tested. Similarly, direct action against a responsible trustee, in that capacity, for natural resource damages awaits its day in court.

If the CERCLA liability articulated in *Union Gas* is upheld as applicable to natural resource damages as well as clean-up costs, it

liability as owing solely to the federal government, there would have been no need to legislate specially to establish that cause of action. *Id.*

268. 109 S. Ct. at 2280-81.

269. Congress, exercising its power under the commerce clause, "has the authority to override States' immunity." *Id.* at 2284. States are deemed to have consented to be held liable under congressional enactments when they ratified the commerce clause. *Id.*

270. *Id.*

271. *Id.* at 2285.

Because Congress has decided that the federal interest in protecting the environment outweighs any countervailing interest in not subjecting States to the possible award of monetary damages in federal court, and because the "judicial power" of the United States plainly extends to such suits . . . we may not disregard [Congress'] express decision to subject the States to liability under federal law.

*Id.* at 2289 (Stevens, J., concurring).

272. *Id.* at 2285.

273. *Id.* at 2284.

274. *Id.* at 2285.

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seems inevitable that governmental agencies will be named as responsible parties to share the liability for the huge damage awards authorized under the statute. The “deep pocket” phenomenon is as likely to operate in environmental litigation as in any tort litigation, and state or federal government entities will surely qualify whenever the PRP connection can be established. As litigation involving governmental PRP’s increases, a number of issues may be anticipated.

1. Conflicts of Interest

A trustee empowered to investigate and pursue restoration of damaged trust resources, favored with a rebuttable presumption of accurate damages assessment under codified procedures, encounters an interesting conflict of interest when that same trustee is a potentially or actually liable party. The goal of restoring the environment under such circumstances risks being compromised. The Ohio decision upheld the option of delegating assessments to PRP’s themselves.\(^{276}\) The court perceived no problem because of the required trustee oversight of such activity. Yet the opinion does not address how reassurances might be sustained when the PRP is the trustee itself and has an obvious incentive to undervalue the loss or to apportion liability to minimize its own contribution to the very damages being assessed.

In these circumstances, the assessment process becomes suspect, and the diligence (or at least neutrality) of trustee oversight is compromised. When a state is a PRP, and when the federal and state jurisdictions in the resource trusteeship overlap, perhaps the federal government under a supremacy theory could act as damage assessor for the recovery action. Such an arrangement would alleviate the state’s conflict of interest when it is a PRP. Yet, in this scenario, given the broad PRP definition under the statute, a nexus sufficient to give the federal government “standing” over the damaged resources is likely to confer PRP status on the federal government as well as on the state. Moreover, federalism impediments may preclude federal intervention over state resources in other circumstances.

Furthermore, government trustees could be conflicted out of a recovery action entirely. If restoration of natural resources following injury from hazardous substances is indeed the national policy, legislation to facilitate alternative citizen suits are a prudent—even necessary—alternative. Some common law right to an unpolluted envi-

\(^{275}\) See supra note 158, Issue (3).
ronment might be found to support citizen standing to sue under a private attorney general theory, despite the CERCLA limitation conferring on government trustees alone the authority to bring actions for public natural resource damages. When a public trust theory is codified, as under CERCLA, it is tempting to imply a dimension of citizen rights if the government itself becomes implicated as a liable party and is unable to exercise its fiduciary duty to restore the environment.

2. Satisfaction of Judgment Dilemmas

When monetary damages are the relief sought and awarded against a public trustee, the source of funds to satisfy the obligation is problematic. Whether it is appropriate to use a state equivalent of the federal Superfund to restore lost uses or lost resources when the state is a responsible party is questionable. Such a model is based on a tax structure funded by industry engaged in the activity deemed hazardous to the resources. A disproportionate burden would fall on contributors to the fund over the rest of the citizenry if the state is not also a contributor to the fund. The use of general tax revenues for such purposes would transform the cost internalization model into a loss spreading mechanism with the government (the already injured public, more accurately) absorbing the loss. Treasuries at both federal and state levels tend not to amass significant contingency reserves for such purposes. The public rarely manifests sufficient political pressure to cause natural resource concerns to prevail over education, health, or the myriad of other pressing social needs, not the least of which is the urgent need to clean up hazardous sites, a process distinguishable from the natural resource damages actions under CERCLA. These considerations suggest the probability of lower (or uncollectible) recoveries when a trustee is the liable party. The same unsatisfactory result may be anticipated as when assessments use inadequate measurement methodologies: awards that are insufficient to restore the damaged environment.

Furthermore, if tax revenues are used to satisfy a state’s liability, “willingness to pay” could take on new meaning as the standard measure of natural resource damages. The need to use public funds may cause restoration to be perceived as too costly in light of other social needs. The public may come to view degradation of natural resources, after site cleanups and alleviation of health risks, as simply an unavoidable sacrifice of modern life. Just as the finite re-

276. For a critique of citizen suits by environmental groups, which often act in a private attorney general capacity and often under the CWA as the cheapest and most successful avenue to environmental damages recoveries, see Greve, Congress’s Environmental Buccaneers, Wall St. J., Sept. 18, 1989, at A16, col. 4.
sources of Superfund itself are placed off limits for natural resource restoration in order to concentrate the funds on the more urgent human health aspects of toxic cleanup and remedial activities at Superfund sites, so too all losses beyond the cleanup phases may be deemed simply too costly when the PRP's are not entities whose profits can be tapped to satisfy the liability.

Insurance for toxic liability is an increasingly problematic area in the private sector because of the size of awards for cleanup. This problem is bound to increase as the natural resource damages provisions of CERCLA are utilized more fully in court or in settlement agreements and added on to cleanup awards. Insurance is already difficult to obtain, and insurance companies resist the huge payouts in court. An increase in government liability will exacerbate the insurance crisis for that type of coverage. Moreover, a self-insurance option would defeat the purpose of removing the drain on public funds to cover the cost of public resource damages. The financing of

277. "SARA cut off the availability of Superfund money for natural resource restoration in 1986, but the statutory provisions governing Superfund remain on the books and provide evidence of Congress’ intent to require responsible parties to pay restoration costs." Ohio v. United States Dep’t of Interior, 880 F.2d 432, 448 (D.C. Cir. 1989) (footnote omitted).

278. Environmental liability insurance once was not closely tied to actual liability risks and not tailored to individual firms’ safety records. Hence, premium rates did not serve to internalize costs. However, with the increase in recent years of environmental liability litigation, insurance companies discovered that courts were broadly construing insurance policies and imposing significant waste-related liabilities. "Facing massive awards to insureds who had paid low premiums, and fearing further surprises, most insurers have withdrawn from the environmental liability market. . . . New liability insurance policies are rarely available and often prohibitively costly." Developments in the Law: Toxic Waste Litigation: Natural Resources Damages, supra note 26, at 1575-76. Without such insurance, many liable parties will be unable to absorb the costs of their liability. See also Pendygraft & Plews, Who Pays for Environmental Damage: Recent Developments in CERCLA Liability and Insurance Coverage Litigation, 21 IND. L. REV. 117 (1988); Note, Insurance Coverage for Superfund Liability: A Plain Meaning Approach to the Pollution Exclusion Clause, 27 WASHBURN L.J. 161 (1987).

279. The California Supreme Court recently upheld an insurer's liability for $100 million in cleanup costs relating to the leakage of chemical solvents into groundwater near Aerojet-General Corporation’s Sacramento plant. The court agreed with the insured’s claim that the policy covers the cost of environmental cleanups under the “damages” provision common to many general liability policies. The interpretation of damages provisions in insurance policies “has been at issue in several multimillion-dollar cases in California as well as high-stakes legal battles in other states.” L.A. Times, August 11, 1989, at I29, col. 2. The court rejected the insurer’s argument that the provision does not apply to such “business expenses” as environmental cleanups. The insurer asserted that if insurers are held responsible, “premiums are likely to rise and coverage may become prohibitively expensive.” Id. The issue of who pays for removing hazardous waste from the environment is the “pivotal question”; likewise, the question may be asked, who pays for natural resources damages uncompensated after a cleanup effort?
the government's environmental liabilities is certain to pose dilemmas, both practical and political, at least as significant as those facing private parties.

A final implication of trustee liability for natural resource damages relates to an alternative recovery option under CERCLA: acquisition of the equivalent of damaged resources. When that option involves acquiring land, not merely replacement organisms, its use is intended only when restoration of a damaged site is not technically feasible. However, the government may view that remedy as more attractive than actual expenditure of funds to satisfy its liabilities. Both state and federal governments hold large percentages of the nation’s physical resources. A temptation could arise to satisfy judgments by depleting the total trust holdings through rededication of uses. Several concerns attach to that option. First, no perfect substitute is ever available to replace the loss of unique property. Second, the government has eminent domain powers and could condemn property to meet the public demand for restoration of lost services, although doing so to meet obligations incurred by its own “wrongs” against the environment—that is, the public trust—creates a number of equity concerns. Finally, such a solution is finite at best, limited by the availability of “comparable” lands and the legitimacy of converting resource holdings to compensate for losses rather than restoring damaged sites, the remedy contemplated by CERCLA. Yet the option is available, and expediency could prevail over more costly reparation options.

VI. CONCLUSION

Numerous questions remain to be addressed in the assessment of natural resource damages, the apportionment of liability, the recovery options, and remedy implementation. These issues implicate both the success of restoration efforts and the social priorities which sustain them. They assume increased complexity when the public trustee is a responsible party.

The natural resource damages recovery provisions of CERCLA have not been fully exploited. A delay in issuing damage assessment rules and the higher priority placed on urgent and costly cleanup and remedial activities have inhibited the routine use of the powerful tool for protecting and restoring the environment following injury by hazardous substances. That situation is changing. Government trustees will have a rebuttable presumption of accuracy to take to court when DOI reissues damage assessment rules to conform to congressional intent as interpreted in the recent remand rulings. Measurement

methodologies should improve over time to lend increasing accuracy and comprehensiveness to assessment techniques. Values which are difficult to monetize can be incorporated into damages claims as economic constructs evolve to measure them. Recoveries are likely to increase in frequency and amount.

Restoring injured natural resources to their pre-injury condition is a motivating policy behind CERCLA. The legislation encompasses a broad range of protected natural resources, and the sources of harm for which liability is imposed are extensive. Financial responsibility for restoring the environment falls on a broad category of parties responsible for hazardous substance releases. Responsible parties are strictly, jointly and severally liable for the damages. Judicial interpretations of CERCLA provisions confirm that the process for setting the amount of damages must include factors which take account of values beyond actual uses made of the resources. The methodologies used to measure damages must favor a restoration or replacement valuation, whether or not such a measure results in larger awards than would a diminution in use measure. These decisions ensure that the level of damages sought will remain quite high.

The authority of federal and state trustees to pursue recovery of damages for injury to natural resources arguably incorporates fiduciary duties consistent with traditional trust concepts. These public trustees are accountable to citizens for the responsible settlement of damages claims. The public may challenge government action if there is evidence of settlements which inadequately compensate for losses. Moreover, CERCLA eliminates governmental immunity from suit by private parties seeking contribution from trustees who are liable for any portion of such damages when their status as responsible parties is established under the Act’s comprehensive definition. Therefore, government trustees themselves increasingly may be held liable for natural resource damages.

If, as has been asserted, it is the resources themselves which such legislation aims to protect, then trustee liability should be co-extensive with that of any other responsible party. The state and federal nexus to vast holdings of water, land, wildlife, wilderness, wetlands, parklands, and other resources, as well as government involvement with innumerable sites and facilities as owner, operator, lessor, or transporter of hazardous substances covered by the statute, render governments particularly vulnerable to potentially enormous damages when things go awry and natural resources are harmed. Financing protection and restoration objectives and resolving conflicts of in-
terest inherent in the regulator and responsible party dichotomy loom as areas of legitimate concern worthy of anticipatory study.

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