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Three Fallacies of the Contemporary Legal Concept of Environmental Injury: An Appeal to Enhance “One-Eyed Reason” with a Normative Consciousness

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Whether a particular human impact on the natural environment is perceived as an “injury” is the threshold issue underlying all environmental statutes and regulations. Legal “environmental injury” determinations are tainted, however, by three fallacies of contemporary jurisprudence: (1) “teleological confusion”—as such determinations are rooted in an anthropocentric perspective and are further dictated by the economic and technological concerns of industry; (2) “epistemological arrogance”—as they over-confidently rely on objective and rational formulations for determining the earth’s sustainability thresholds; and (3) “ontological error”—as they emphasize private property entitlements and individual liberty over the greater interests of the community. Part I of this Article describes three overriding characteristics of the contemporary legal concept of environmental injury, referring to specific examples within the Endangered Species Act, Clean Water Act, Clean Air Act, National Environmental Policy Act and the Article III standing doctrine of the United States Constitution. Part II critiques these characteristics in light of the three fallacies of contemporary jurisprudence and offers alternative normative perspectives for how our legal system can better understand and address environmental injuries. The objective of this Article is to identify—or articulate in a new light—a normative dimension of environmental theories of law that ought to play a vital role when policymakers contemplate and debate the significance of human impacts on the earth.

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 - I. INTRODUCTION

The mantra “leave no trace” echoes in the minds of environmentally conscious adventurers while they journey through pristine natural areas. “Leave no trace” embodies the principle of minimizing human impact on

the natural environment. The United States Forest Service oversees an official Leave No Trace educational program that is designed to develop and teach practical conservation techniques to reduce impacts of visitors on federally protected forests, parks, and wilderness areas. The Leave No Trace materials refer to “impact” as “changes visitors create in the backcountry, such as trampling of fragile vegetation or polluting of water sources. The term may also refer to social impacts—behavior that diminishes the wilderness experience of other visitors.”¹ When traveling through the arid desert regions of the Southwest, visitors are specifically instructed to avoid stepping on or disturbing the lichen-coated rocks known as desert pavement, as one step “can leave a visible impact for hundreds of years.”²

Indeed, much of human action—including a single step—can adversely impact the natural environment. In terms of significance, humans left their footprint on the earth far before the industrial revolution. Geological studies have shown that as early as 11,000 years ago, the hunting and gathering practices of early civilizations caused significant changes in the world’s mega-fauna, including extinctions of species; and that more than 4000 years ago, irrigation practices of agricultural societies led to soil salinization, affecting crop yields.³ Throughout human history, the intensity, complexity, and frequency of human impact on the natural environment has increased exponentially, following the pace of industrial and technological development, the growth of the human population, and the rise in overall per capita consumption.⁴

Recognizing this trend, humans have time and again contemplated and debated the meaning of their impact on the earth in three specific ways, as the geological historicist Clarence J. Glacken describes:

In the history of Western thought, men have persistently asked three questions concerning the habitable earth and their relationship to it. Is the earth, which is obviously a fit environment for man and other organic life, a purposefully made creation? Have its climates, its relief, the configuration of continents influenced the moral and social nature of individuals, and have they had an influence in molding the character and

1. NATIONAL OUTDOOR LEADERSHIP SCHOOL, LEAVE NO TRACE OUTDOOR SKILLS AND ETHICS: DESERT & CANYON COUNTRY (1996). Information for ordering the pamphlet can be found at <http://archive.Int.org/INTPublications/Newsletter/LNTNewsltrArchive.php>.

2. *Id.*

3. ANDREW GOUDIE, THE HUMAN IMPACT ON THE NATURAL ENVIRONMENT 375 (4th ed. 1997).

4. *Id.*

nature of human culture? In his long tenure of the earth, in what manner has man changed it from its hypothetical pristine condition?⁵

Each of these three questions embodies a fundamentally normative dimension. The first is teleological—regarding the ultimate purpose of the earth’s creation. The second is ontological—involving the human relation to the environment. And the third is epistemological—concerning human knowledge and judgments about our impact on the earth. Responses addressing these three questions are inherently products of deeply felt philosophical presuppositions, and perhaps theological convictions. Such underlying value judgments largely influence, and can even dictate, one’s major premise when determining whether certain human impacts on the earth are for better or worse.⁶

Whether a particular human impact on the environment is perceived as an “injury” is the threshold issue underpinning all “positive environmental law.”⁷ In the last three decades, Congress has enacted numerous environmental statutes to address the growing threats modern human society poses to the environment, many with the explicit intent to reduce adverse human impacts on the earth’s systems and resources.⁸ Although recognizing that the overall human impact on the natural environment is an unavoidable reality, and thus at least to an extent a natural phenomenon, contemporary theories of environmental law embrace the notion that certain human impacts on the earth are improper. The point at which the human effect on the environment is deemed inappropriate, thereby constituting a legally cognized injury, becomes an issue involving scientific, economic, political, and moral judgments. The contemporary legal concept of environmental injury, however, pays little heed to the moral dimension.

5. CLARENCE J. GLACKEN, *TRACES ON THE RHODIAN SHORE: NATURE AND CULTURE IN WESTERN THOUGHT FROM ANCIENT TIMES TO THE END OF THE EIGHTEENTH CENTURY*, at vii (1967).

6. See RUGGERO J. ALDISERT, *LOGIC FOR LAWYERS* 229 (3d ed. 1997) (“[V]alue judgments affect the resolution of the three flashpoints of legal conflicts: choosing between or among competing legal precepts to formulate the major premise, as well as the minor premise in interpreting the precept as chosen and applying the chosen and interpreted precept to facts that have been found.”).

7. The phrase “positive environmental law” is used throughout this Article to make clear the distinction between the environmental laws that exist in our nation’s statute books and any notions of an ideal environmental law, as well as the concept of “natural law.” *BLACK’S LAW DICTIONARY* 1200 (8th ed. 2004) (defining positive law: “A system of law implemented and laid down within a particular community by political superiors, as distinct from moral law or law existing in an ideal community or in some nonpolitical community; positive law typically consists of enacted law—the statutes and regulations that are applied and enforced in the courts.”).

8. *E.g.*, Endangered Species Act (ESA) § 2(b), 16 U.S.C. § 1531(b) (2000); Clean Water Act (CWA) § 101(a), 33 U.S.C. § 1251(a) (2000); National Environmental Policy Act (NEPA) § 2, 42 U.S.C. § 4321 (2000).

In his article *Three Fallacies of Contemporary Jurisprudence*, Frank Alexander argues that theories of law today are inadequate because they fail to address normative questions concerning teleology, epistemology, and ontology.⁹ He maintains that this failure signifies three fallacies in contemporary jurisprudence: the “teleological confusion”; “epistemological arrogance”; and “ontological error.”¹⁰ Alexander’s thesis provides an effective means for articulating the quandary embedded in contemporary environmental jurisprudence.

The theories underlying all positive environmental laws are widely recognized and often criticized for their anthropocentric perspective,¹¹ their over-confidence in objective and rational formulations for determining the earth’s sustainability thresholds,¹² and their emphasis on private property entitlements and individual liberty over the greater interests of the community.¹³ As such, contemporary environmental jurisprudence reflects the prevailing teleological anthropocentric, epistemologically arrogant and ontologically individualistic convictions of Western thought with regard to our relation to the environment.

In short, the generally accepted belief—as influenced by Western science, philosophy and religion—is that the earth was created for human ends, that human ability to reason renders us capable of knowing how to assess the consequences of our impacts on the environment, and that humans have the authority and capacity to dominate and manipulate the earth’s resources to meet our interests. Each of these convictions reveals how our positive environmental laws are skewed by Alexander’s three fallacies of contemporary jurisprudence. Namely, they egoistically confuse the ultimate purpose with human righteousness; arrogantly deny limits to the human capacity to reason; and erroneously place the human species’—or an individual’s—claims of authority and entitlement above what is good for the whole (i.e., the community). These convictions have led to an illusory legal concept of environmental injury.

9. Frank Alexander, *Three Fallacies of Contemporary Jurisprudence*, 19 LOY. L. REV. 1, 1-3 (1985).

10. *Id.* at 2.

11. See generally Laurence H. Tribe, *Ways Not to Think About Plastic Trees: New Foundations for Environmental Law*, 83 YALE L.J. 1315, 1324 (1974) (hypothesizing that crucial environmental choices that face industrialized nations will significantly shape those nations’ value with respect to nature and the wilderness).

12. Francois Ewald, *The Return of the Crafty Genius: An Outline of a Philosophy of Precaution*, 6 CONN. INS. L.J. 47, 70-77 (1999) (discussing generally HANS JONAS, *THE IMPERATIVE OF RESPONSIBILITY* (1984)).

13. E.g., Carol Rose, *Given-ness and Gift: Property and the Quest for Environmental Ethics*, 24 ENVTL. L. 1 (1994).

The thesis of this Article is that the contemporary legal concept of environmental injury can, and should be, enhanced by a normative consciousness. Inquiries regarding the legal significance of human impacts on the environment should acknowledge that the purpose of the earth's creation may not be solely, or even primarily, for the sake of humans. Legal conclusions regarding environmental injuries should at once recognize that the natural environment has value for itself, not just for humans' sake, and concede that the reasoning capacity of humans to assess this value is constrained by our own subjective perspective. Policymakers should accordingly err on the side of caution when considering whether and to what extent the value of an environmental entity has been injured by human actions. Finally, theories of environmental law must acknowledge that obligations flowing from our interdependent relation with the natural environment may at times supersede legal constructs of individual liberty and entitlements.

Part I of this Article describes three overriding characteristics of the contemporary legal concept of environmental injury. Part II critiques these characteristics in light of Alexander's three fallacies of contemporary jurisprudence and offers alternative normative perspectives for how our legal system can better recognize, understand, and address environmental injuries. This Article does not provide an exhaustive description of the current legal concept of environmental injury, nor does it attempt to propose a precise solution to the shortfalls of contemporary environmental jurisprudence. It is meant to identify—or articulate in a new light—a normative dimension of environmental theories of law that ought to play a vital role when policymakers contemplate and debate the significance of human impacts on the earth. Ultimately, it serves as a call for affording the moral dimension a louder voice to at least match the decibel currently enjoyed by the scientific and economic arenas in the ongoing dialogue on improving our environmental legal system.¹⁴

14. See Michelle Maiese, *Dialogue* (Conflict Research Consortium, Univ. of Colorado 2003), at <http://www.intractableconflict.org/m/dialogue.jsp>. Maiese describes dialogue as “both a kind of conversation and a way of relating.” *Id.* She explains:

Dialogue has no fixed goal or predetermined agenda. The emphasis is not on resolving disputes, but rather on improving the way in which people with significant differences relate to each other. The broad aim is to promote respectful inquiry, and to stimulate a new sort of conversation that allows important issues to surface freely.

Id. Moreover, “[w]hile opponents in deep-rooted conflict are unlikely to agree with each other's views, they can come to understand each other's perspectives.” *Id.* See generally AMY GUTMANN & DENNIS THOMPSON, *DEMOCRACY AND DISAGREEMENT* (1998) (advocating dialogue, which

II. THREE CHARACTERISTICS OF THE CONTEMPORARY LEGAL CONCEPT OF ENVIRONMENTAL INJURY

Contemporary environmental statutes and doctrines share three prevailing characteristics, each of which influences judgments on whether a human impact to the earth constitutes a legally cognizable environmental injury. First, their overriding purpose of protecting environmental quality is primarily motivated by human interests in a healthy, sustainable, and aesthetically pleasing environment. And that anthropocentric purpose is ultimately dictated by, or rather reduced to, industries' interests in economic and technological progress. Second, contemporary environmental statutes and doctrines perceive science and other methodical data as a sufficient source for knowing the value of the environment, and they place ultimate confidence in the capacity of governmental agencies to assess whether and to what extent that value is diminished by prospective human action. Finally, these statutes and doctrines favor principles of individual liberty and theories of entitlement over the greater interests of the community. These three characteristics outline the contemporary legal concept of environmental injury. They also foretell Alexander's three fallacies of contemporary jurisprudence.

A. *Rooted in an Anthropocentric Perspective that Is Ultimately Dictated by the Economic and Technological Interests of Industry*

The majority of the nation's environmental statutes were enacted in response to the growing public outcry in the 1960s, which culminated into the first Earth Day in April 1970.¹⁵ Many of these statutes are primarily aimed at reducing threats to the environment from the increasing use of toxic chemicals and pesticides, hazardous waste and other pollutants for the sake of human health and well-being.¹⁶ Others are designed to conserve natural resources primarily for human

encourages participation and communication, as a preferable mode of political decisionmaking and means for arriving at public judgment).

15. This included reactions to Rachael Carson's book *Silent Spring*, published in 1962, which alerted the general public to the dangers of pesticides, particularly to humans; the Santa Barbara oil spill in 1969, where Union Oil's offshore well burst, fouling marine life and the coast of Southern California; and the plan to flood the Grand Canyon, which was proposed in 1966 but gutted in 1968. See Environmental Movement Timeline, *A History of the American Environmental Movement*, at <http://www.ecotopia.org/ehof/timeline.html> (last updated June 17, 2003).

16. E.g., Clean Water Act (CWA) §§ 101-607, 33 U.S.C. §§ 1251-1387 (2000); Clean Air Act (CAA) §§ 101-618, 42 U.S.C. §§ 7401-7671 (2000); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) §§ 101-405, 42 U.S.C. §§ 9601-9675.

consumptive interests.¹⁷ All of our nation's environmental statutes are thereby fundamentally anthropocentric in nature. Adverse impacts to the environment are perceived as indicative of risks to the health and well-being of humans, and thus, injury to the environment is rooted in an actual or threatened injury to human interests. Even the Endangered Species Act (ESA), which signifies the closest illustration of a law directed at protecting nonhuman species, highlights the scientific and aesthetic interest that humans have in other species.¹⁸

Although environmental statutes are rooted in human interests, namely the human desire for a healthy, sustainable, and aesthetically pleasing environment, their primary objective is to protect and restore the quality and integrity of the environmental component at issue. Congress's declared purposes for environmental legislation include to: "prevent or eliminate damage to the environment and biosphere";¹⁹ "protect and enhance the quality of the Nation's air resources";²⁰ "restore and maintain the chemical, physical and biological integrity of the Nation's waters";²¹ and conserve "the ecosystems upon which endangered species and threatened species depend."²² These overarching goals

17. *E.g.*, National Forest Management Act, 16 U.S.C. §§ 1600-1614 (2000); Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. §§ 1801-1883. These statutes cognize environmental injury in relation to notions of sustainability, respectively preventing renewable timber and fishery resources from being depleted beyond recovery to ensure that their benefit to humans will sustain present and perhaps future generations.

18. ESA § 2(a)(3), 16 U.S.C. § 1531(a)(3) (declaring that such species "are of esthetic, ecological, educational, historical, recreational, and scientific value *to the Nation and its people*" (emphasis added)).

19. NEPA § 2(a), 42 U.S.C. § 4331(a) (stating its purpose "[t]o promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man"). The statute further expands upon this purpose by adding "fulfill the responsibilities of each generation as trustee of the environment for succeeding generations." NEPA § 2(b)(1), 42 U.S.C. § 4331(b)(1).

20. CAA § 101(b)(1), 42 U.S.C. § 7401(b)(1) (stating its goal "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population").

21. CWA § 101(a), 33 U.S.C. § 1251(a) (stating its goal to restore and maintain the chemical, physical, and biological integrity of the Nation's waters); *see also* CWA § 101(a)(3), 33 U.S.C. § 1251(a)(3) (adding its aim to prohibit "the discharge of toxic pollutants in toxic amounts").

22. ESA § 2(b), 16 U.S.C. § 1531(b) (stating its goal "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved"). Congress enacted the ESA in response to its recognition that numerous fish, wildlife, and plant species were facing extinction at an unprecedented rate due to human actions and the public's general lack of concern for the preservation of nonhuman species. ESA § 2(a)(1)-(2), 16 U.S.C. § 1531(a)(1)-(2) (finding "various species of fish, wildlife, and plants in the United States have been rendered extinct as a consequence of economic growth and development untempered by adequate concern and conservation; [and] other species of fish, wildlife, and plants have been so depleted in numbers that they are in danger of or threatened with extinction").

convey the impression that the nation has embraced an unconditional commitment toward protecting and improving the quality of the environment, with little to no consideration of short-term economic and technological concerns. Substantive provisions contained within these environmental statutes have been amended and implemented, however, in ways that render their primary objective second to competing interests in economic and technological feasibility. Consequently, aside from their underlying anthropocentric motivations, environmental statutes have been detached from their declared purpose of protecting environmental quality.

The degree to which environmental quality is either diminished or improved is generally not the statutory standard for assessing the threshold question of injury to the environment. More precisely, the amount of pollution or level of activity considered injurious to the environment is determined by what regulated parties contend is technologically or economically possible now or in the near future; this is not necessarily what actually diminishes the integrity and quality of the environmental component addressed by the statute. As one critic explains, the substantive provisions of environmental statutes are filled with “escape-hatch” or “weasel” words,²³ including: “to the extent feasible”;²⁴ “maximum extent practicable”;²⁵ and “best available technology.”²⁶ These loosely defined phrases negate or even contradict

23. George Coggins, *An Ivory Tower Perspective on Endangered Species Law*, 8 NAT. RESOURCES & ENV'T 3, 57 (1993).

24. CWA § 208(b)(2)(F)-(I), 33 U.S.C. § 1288(b)(2)(F)-(I) (providing standards for identifying nonpoint sources of water pollution “to the extent feasible”).

25. ESA § 10(a), 16 U.S.C. § 1539(a) (providing that a private landowner may obtain a permit to harm listed species if she agrees to mitigate impacts “to the maximum extent practicable”).

26. CWA § 301, 33 U.S.C. § 1311 (requiring the EPA to promulgate limitations on the discharge of pollutants into the waters of the United States). These limitations are referred to as effluent limitations. *Id.* The effluent limitations are based on the discharge levels achievable by what EPA determines to be the “best available technology economically achievable.” *Id.* Compare CWA § 301, 33 U.S.C. § 1311, with CAA § 109, 42 U.S.C. § 7409(b) (2000) (instructing the EPA to set primary ambient air quality standards “the attainment and maintenance of which . . . are requisite to protect the public health” with “an adequate margin of safety”). The question of whether “adequate margin of safety” can include economic and technological concerns has been one of great debate. In *Whitman v. American Trucking Ass’n*, 531 U.S. 457, 470-71 (2001), the Supreme Court concluded that costs must not be a factor in standard setting for national ambient air quality standards, or NAAQS. Justice Scalia, writing for the majority, held that this interpretation was clear from the statutory text, which does not include consideration of economic or technical concerns, and moreover noted that if the EPA were to “secretly consider[] the costs of attainment . . . it would be grounds for vacating the NAAQS.” *Id.* at 471 n.4. Justice Breyer’s concurrence quoted the Senate Report of the 1990 amendments to the CAA, which provided that NAAQS are to be set at “the level that ‘protects the public health’ with an ‘adequate margin of safety’ without regard to the economic or technical feasibility of

Congress's overriding declared purpose of protecting environmental quality, and consequently render this explicit objective unattainable.²⁷ Even those statutes whose substantive provisions originally stayed true to their purpose—cognizing environmental injury based solely on the degree that the quality of the environment has been diminished—have subsequently been inundated with “escape-hatches” to accommodate the feasibility claims of industry and landowners. The Clean Water Act (CWA) and the ESA present two examples.

The CWA is based on a permit scheme, in which the “addition” of any “pollutant” from a “point source” into “waters of the United States” requires a permit.²⁸ For purposes of the CWA, injury to the environment occurs when there is an unpermitted discharge.²⁹ The CWA vests the EPA with the authority to issue permits and to determine the permissible levels of pollution to be discharged into the nation's waters.³⁰ When enacting the CWA, Congress declared it “the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985.”³¹ Originally, the CWA required the EPA to establish a list of toxic pollutants and discharge pollutant thresholds based on water quality and human health standards, without consideration of costs or feasibility.³² A set of lawsuits brought by regulated industries, however, led to the “Flannery Decree” in 1977, in which a court required the EPA to establish technology-based standards for sixty-five toxic pollutants discharged by twenty-one primary industries.³³ Later in that same year,

attainment.” *Id.* at 492 (Breyer, J., concurring) (emphasis in original) (quoting S. REP. NO. 101-228, at 5 (1989)).

27. Coggins, *supra* note 23, at 57 (explaining that “[d]rastic language does not guarantee achievement of the legislative objective (compare Superfund), but weasel words like discretion, practical, practicable, and judgment, often guarantee failure”). This point leads into the epistemological question, as one could argue that these statutes functionally require best efforts instead of perfection, because we *do not know* perfection in the context of environmental quality. *See* discussion *infra* Part III.B. The point here, however, is that we have come to analyze the environment as the object, rather than the subject of laws and regulation. In this sense, environmental quality is always dependent on human interpretation and action—and the subjective interpretations of landowners and industry have come to dominate environmental jurisprudence as other, perhaps more normative, views are pushed aside.

28. CWA §§ 301(a), 502(12), 33 U.S.C. §§ 1311(a), 1362(12).

29. CWA § 402, 33 U.S.C. § 1342.

30. *Id.* (stating that with EPA approval delegated programs also have authority to issue permits).

31. CWA § 101(a)(1), 33 U.S.C. § 1251(a)(1).

32. Clean Water Act, Pub. L. No. 92-500, § 307(a)(1), 86 Stat. 816, 856 (1972) (codified as amended at 33 U.S.C. §§ 1251-1387). The EPA was required to promulgate, within a short period following the CWA's enactment, a list of “any toxic pollutant or combination of such pollutants” to be subject to regulation under the statute. *Id.*

33. *Natural Res. Def. Council v. Train*, 8 ERC (BNA) 2120, 2122 (D.C. Cir. 1976).

Congress ratified this decree and expanded the number of toxic pollutants and industries.³⁴ Thereafter, the EPA's objective has been to formulate and implement effluent limitations for industrial categories based solely on "best available pollution control technology," which includes economic concerns.³⁵ Courts have reiterated that the criterion for setting these standards is not the chemical, physical, or biological quality of the regulated water body, notwithstanding that the declared purpose of the CWA refers to these water quality indicators.³⁶ Thus, injuries actually cognized by the CWA are not dictated by the end goal of restoring or maintaining water quality, but instead are based on industries' concerns reflected in a permit.³⁷ By placing industries' claims of technical and economic feasibility at the forefront, the CWA has lost sight of its purpose and has increasingly become an instrument for mediating the interests of polluters. This reflects the nation's waning commitment toward eliminating our unsafe and unhealthy waters, albeit the motive underlying this objective is purely based on human interests.

Congress has similarly amended the ESA in the interest of accommodating regulated parties' feasibility assertions, and consequently, has steered the ESA away from its original unwavering

34. CWA § 301(b)(2)(C), 33 U.S.C. § 1311(b)(2)(C); *see also* Hercules, Inc. v. Env'tl. Prot. Agency, 598 F.2d 91 (D.C. Cir. 1978) (explaining the significance of the amendments).

35. The basis for technology-based conditions depends on the pollutant. "Best Available Technology Economically Achievable" (BAT) applies for most pollutants. BAT is a national standard reflecting the best performers in the industrial categories, taking costs into account. *See* CWA § 301(b)(2)(A)(i), 33 U.S.C. § 1311(b)(2)(A)(i). "Best conventional pollutant control technology" (BCT) is for "conventional pollutants," including oil and grease, biological oxygen demanding pollutants, fecal coliform, and pH. BCT imposes "cost-reasonable" requirements. CWA §§ 301(b)(2)(E), 304(b)(4), 33 U.S.C. §§ 1311(b)(2)(E), 1314(b)(4). "New Source Performance Standards" (NSPS) apply to new facilities. NSPS reflect the greatest degree of effluent reduction achievable with the best available demonstrated technology. CWA § 306(b), 33 U.S.C. § 1316(b). Where a facility is not covered by the national rule, technology-based conditions are established based on best professional judgment. CWA § 401(a), 33 U.S.C. § 1341(a); CWA Regulations, 40 C.F.R. § 122.44(a) (2004).

36. *E.g.*, *Montgomery Env'tl. Coalition v. Costle*, 646 F.2d 568 (D.C. Cir. 1980) (explaining that Congress's intent when adopting technology-based standards was to avoid scientific uncertainty inherent in water quality standards).

37. In addition to meeting technology-based requirements, NPDES permits must include any more stringent limitations needed to meet water quality standards established by states and the Total Maximum Daily Load (TMDL) program. State standards are based on the designated use of the water body (e.g., public water supply, recreation, and human consumption of fish) and criteria (e.g., numerical or narrative descriptions) necessary to protect the designated use of the water. CWA Regulations, 40 C.F.R. § 131.10-.11. The TMDL program applies only to impaired waters, or those water bodies for which existing federal and state controls are inadequate to meet water quality standards. *Id.* § 130(b)(5). The TMDLs specify the maximum pollutant loading that can be discharged into the water without violating water quality standards. *Id.* § 130.7(c). The determination of what is "impaired" is based on the interpretations of state agencies, which are too often dominated by economic concerns.

purpose and commitment “to halt and reverse the trend toward species extinction, whatever the cost.”³⁸ An injury under the ESA occurs either when a private party “takes” or when the actions of the federal government “jeopardize” a listed species or that species’ designated critical habitat.³⁹

First, section 9 of the ESA makes it unlawful for “any person” to “take” any listed species.⁴⁰ “Take” is statutorily defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or to attempt to engage in any such conduct.”⁴¹ In essence, anything that impacts the habitat of listed species may be deemed an unlawful “take” or injury.

Responding to landowners’ lamentations over the ESA’s interference with their property rights, Congress amended the ESA in 1982 to provide an exception mechanism in the form of an “incidental take permit” (ITP).⁴² To obtain an ITP, the landowner must prepare a habitat conservation plan (HCP) for the affected listed species that addresses the contemplated land use.⁴³ The United States Fish and Wildlife Service and the National Marine Fisheries Service (the Services) are authorized to approve an HCP and issue an ITP upon finding that the “taking will be incidental,” and that “the applicant will, to the maximum extent practicable, minimize and mitigate the impacts” of the taking.⁴⁴ Moreover, in the interest of securing the landowner’s economic security of the land, the Services have established the “No Surprises” policy, which provides that ITP holders will not be required to preserve more land than they pledge in their initial HCPs, even if science or conditions change.⁴⁵ In this sense, landowners are given a permanent safe harbor from further ESA requirements so long as they maintain the baseline protections on their properties set forth in their original ITP agreements. Consequently, members of a listed species that happen to

38. *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 184 (1978).

39. *Id.* at 184-85.

40. ESA § 9(a)(1), 16 U.S.C. § 1539 (a)(1) (2000).

41. ESA § 3(19), 16 U.S.C. § 1532(19). ESA implementing regulations further define harm as “significant habitat modification or degradation that actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.” ESA Regulations, 50 C.F.R. § 17.31 (2003).

42. ESA Amendments of 1982, Pub. L. No. 97-304, § 10(a), 96 Stat. 1411, 1422-24 (codified as amended at 16 U.S.C. § 1539(a)).

43. *Id.*

44. ESA Amendments of 1982, § 10(a)(2)(B), 16 U.S.C. § 1539(a)(2)(B).

45. ESA Regulations, 50 C.F.R. § 17.22(b)(5); Patrick Parenteau, *Rearranging the Deck Chairs: Endangered Species Act Reforms in an Era of Mass Extinction*, 22 WM. & MARY ENVTL. L. & POL’Y REV. 227, 272 (1998); see also John Kostyack, *Surprise!*, 15 ENVTL. F. 19, 21 (1998).

migrate into the area subject to an HCP are thereafter considered permitted takes.⁴⁶ The applicant will not be required to adopt further mitigation measures even if such measures subsequently become practicable.⁴⁷ To the degree that the ESA's cognized injury to a listed species is directed by what landowners presently perceive as feasible, the ESA has become an idle instrument for mediating the economic and private property interests of landowners. This contravenes the ESA's initial purpose of protecting listed species "whatever the cost" and in doing so, disregards the nation's prophylactic commitment to halting species extinction.

ESA provisions addressing government actions have similar purposes, mandates, and exceptions. Section 7 of the ESA provides that federal agencies must "insure" that their actions are not likely to "jeopardize" the continued existence of listed species.⁴⁸ All federal agencies are required to consult with the Services prior to taking any action that may jeopardize a listed species.⁴⁹ If the Services determine that the government action would result in "jeopardy," the action cannot go forward unless "reasonable and prudent alternatives" are adopted to mitigate the injury.⁵⁰ Jeopardy is defined by regulations as any "action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild or to have an adverse impact on designated critical habitat."⁵¹ In the ESA's seminal case *Tennessee Valley Authority v. Hill*, the Supreme Court held that this duty "admits of no exception."⁵² In response to this holding, however, Congress added an economic oriented

46. Kostyack, *supra* note 45, at 21.

47. The environmental community is presently challenging this policy. *Spirit of the Sage Council v. Norton*, No. 1:98CV01873(EGS) (D.D.C. filed July 29, 1994). In December 2003, the district court held that the Services violated the public notice and comment procedures required by the Administrative Procedures Act (APA) in promulgating new regulations concerning the "circumstances under which ITPs may be revoked in light of the No Surprises Rule." *Spirit of the Sage Council v. Norton*, 294 F. Supp. 2d 67, 72 (D.D.C. 2003). The court remanded the administrative regulations. *Id.* at 92. The court did not, however, establish a timetable for this "global consideration." *Id.* The plaintiffs filed a motion to clarify or amend the order, requesting that the court set a timetable to solicit public comment and announce decisions on the "No Surprises" policy and ITPs. Plaintiff's Motion to Clarify, 294 F. Supp. 2d 67 (D.D.C. 2003) (No. 1:98CV0183 (EGS)), available at <http://www.sagecouncil.com/motclarify.pdf>.

48. ESA § 7(a)(2), 16 U.S.C. § 1536(a)(2).

49. *Id.*

50. ESA § 7(b)(3)(A), 16 U.S.C. § 1536(b)(3)(A).

51. ESA Regulations, 50 C.F.R. § 402.02 (2003). The word "both" was added in 1986, by the order of James Watt, President Reagan's Secretary of Interior. Parenteau, *supra* note 45, at 270.

52. *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 173 (1978).

“escape hatch” to apply to government actions subject to the ESA.⁵³ If the Services determine that a federal agency’s action will jeopardize a listed species, that agency can petition the Endangered Species Committee, otherwise known as the “God Squad,” to exercise its authority to decide whether the public’s economic interest and overall welfare outweighs the cost of completely extirpating the listed species.⁵⁴

The Services are also required to designate a “critical habitat,” which is the habitat deemed necessary to recover each listed species.⁵⁵ Actions that adversely affect the designated habitat also constitute “jeopardy.”⁵⁶ Again, however, Congress amended the ESA to require that the Services consider economic factors when designating a critical habitat.⁵⁷ Only when the benefit of the inclusion outweighs the economic costs can a critical habitat be designated.⁵⁸

Overall, economic interests endorsed by ITPs, the “No Surprises” policy, the “God Squad,” and critical habitat designations temper the ESA’s cognized injury to what landowners and other adversely impacted parties presently perceive as practicable. Consequently, the ESA has been diverted from its initial purpose to protect and conserve species “whatever the cost,” and has instead become an instrument to reconcile the private property interests of landowners. Such back-pedaling signifies the nation’s infirm commitment toward preventing the extirpation of nonhuman species.

In sum, the declared purposes of most environmental statutes reflect a salient, albeit anthropocentric, commitment toward protecting and improving the quality of the environment, irrespective of economic and technical concerns. However, the “escape hatches” contained in substantive provisions, many of which were subsequently added to appease industry and landowner constituents, reveal how these statutes have been diverted from their original quality-based purpose. As technology and economic interests have successfully nudged their way to the forefront, standards for assessing whether a statutorily protected environmental component is injured have increasingly become based on factors other than the extent the biological, physical, or aesthetic quality of that environmental component is actually impaired. The contemporary concept of injury to the environment is mostly directed by

53. Parenteau, *supra* note 45, at 269.

54. ESA § 7(c), 16 U.S.C. § 1536(c).

55. ESA § 4(b)(6)(C), 16 U.S.C. § 1533(b)(6)(C).

56. ESA § 7(a)(2), 16 U.S.C. § 1536(a)(2).

57. ESA § 4(b)(2), 16 U.S.C. § 1533(b)(2).

58. Steven P. Quarles & Thomas R. Lundquist, *The Pronounced Presence and Insistent Issues of the ESA*, 16 NAT. RESOURCES & ENV'T 59, 61 (2001).

regulated parties' present perceptions of feasibility and practicability. The underlying bias in this framework demonstrates that the legal notion of environmental injury is merely a matter of convenience. In this sense, we have come to analyze the environment as the object, rather than the subject, of laws and regulations. Fundamentally, this trend reflects a waning commitment toward protecting environmental quality.

B. Confidence in Objective and Rational Formulations for Determining the Earth's Sustainability Thresholds

In addition to the anthropocentric motive and unsubstantiated commitment to the objective of preventing environmental injuries, environmental statutes reflect an overwhelming confidence in how and what humans can know about our impacts to the environment. Federal environmental agencies generally make the threshold determinations of whether an environmental injury triggers statutory requirements. These determinations are grounded in the agencies' judgments about the resilience of the subject environmental component, the extent that the value of the entity is diminished by human activity, and whether that value can be restored.⁵⁹ The frameworks of many environmental statutes presume that equipping an agency with scientific and other quantifiable data will be sufficient to provide that agency with all it needs to know to make "informed" and "rational" decisions regarding environmental values and injuries. Moreover, empirical data reveals that such agency determinations presuppose that the environment is either capable of withstanding considerable human impacts, or of being restored in such a way that renders an adverse impact insignificant.⁶⁰ Instead of erring on the side of caution, agency determinations tend to reflect confidence in the resilience of the natural environment. Agency findings pursuant to the National Environmental Policy Act (NEPA)⁶¹ and the ESA provide examples of agencies' ultimate confidence in how and what humans can know about injuries to the environment.

NEPA is often recognized as the nation's most ambitious environmental statute; it is the bedrock for ensuring that federal agencies make "fully informed" environmental decisions and that the public can

59. Although agency determinations may be subject to judicial challenge, courts generally confer substantial deference to agency decisions. *E.g.*, *Chevron U.S.A. Inc. v. Natural Res. Def. Council*, 467 U.S. 837 (1984); *cf.* *United States v. Mead Corp.*, 533 U.S. 218 (2001) (lessening the deferential standard when agency decisions are not subject to public notice and comment rulemaking procedures).

60. See *infra* notes 72, 80 and accompanying text.

61. NEPA § 101, 42 U.S.C. § 4321 (2000).

participate in the decision-making process.⁶² NEPA requires federal agencies to prepare a detailed environmental impact statement (EIS) and solicit public comment prior to taking “major Federal actions significantly affecting the quality of the human environment.”⁶³ The EIS must be prepared sufficiently in advance to influence the agency’s decision, and it must evaluate direct, indirect and cumulative impacts from the proposed action and evaluate reasonable alternatives.⁶⁴

Although NEPA does not contain substantive requirements, information generated in an EIS is expected to encourage the agency to modify its action, i.e., by adopting mitigation measures or selecting an alternative it failed to originally consider.⁶⁵ In addition, the EIS process subjects the agency’s decision to public scrutiny, requiring the agency to release a draft EIS to the public and provide an opportunity for the public to comment before the agency makes a final decision.⁶⁶ Overall, NEPA’s procedural mandates are intended to lead to better informed and more rational agency decisionmaking.⁶⁷ This EIS process itself reflects the belief that scientific and other methodical data can reveal the full value of the environment and, moreover, signifies the faith that agencies are capable of assessing this “objective” data to accurately determine the extent that value may be diminished by prospective human actions.

In addition, agency implementation of NEPA’s EIS process demonstrates the agency’s overall confidence in the environment’s resilience to human impacts. The threshold question for triggering an EIS is whether a federal action will have a “significant effect” on the environment.⁶⁸ An agency initially prepares a brief environmental

62. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989) (explaining that NEPA “ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts; it also guarantees that the relevant information will be made available to the larger [public] audience that may also play a role in both the decision-making process and the implementation of that decision”).

63. NEPA § 102, 42 U.S.C. § 4332(C).

64. NEPA Regulations, 40 C.F.R. § 1506.9-10 (2000).

65. *Methow Valley*, 490 U.S. at 350 (explaining that NEPA procedures “are almost certain to affect the agency’s substantive decision”); see also Bradley Karkkainen, *Toward a Smarter NEPA: Monitoring and Managing Government’s Environmental Performance*, 102 COLUM. L. REV. 903, 910 (2002).

66. See generally *Methow Valley*, 490 U.S. at 349-50 (discussing the use of “action forcing” procedural requirements in NEPA to meet the commitment to protect and promote environmental quality).

67. *Id.*

68. NEPA § 102(C), 42 U.S.C. § 4332(C). This question is to be reviewed in light of at least two factors: the extent to which the action will cause adverse environmental effects in excess of those caused by existing uses in the affected area and the absolute quantitative adverse

assessment (EA) to determine whether a full EIS must be completed.⁶⁹ If the EA reveals that the action will significantly affect the environment the agency will then begin the EIS process. Otherwise, it will issue a “Finding of No Significant Impact” (FONSI).⁷⁰ Federal agencies overwhelmingly conclude that their proposed actions fall below this “significant” threshold so as to avoid NEPA’s more thorough EIS requirements.⁷¹ Over 50,000 FONSI’s are issued each year, while less than 450 EIS’s are prepared.⁷² The agencies’ overwhelming use of FONSI’s evidences that the agencies—and the data they assess—presuppose that the environment is able to withstand considerable human impacts. Fundamentally, NEPA’s structure and implementation reflect an overall confidence in both how environmental injuries can be known and what impacts the environment can withstand.

Like NEPA’s EIS process, the ESA’s method for determining whether a listed species is injured is based on a system of information exchange and consultation, which is believed to lead to better or more rational decisions. The ESA mandates that the Services are to use only the “best available science” when consulting with other agencies on the effects of prospective actions on listed species.⁷³ This framework asserts that modern science is a sufficient source of information for making “take” and “jeopardy” determinations, that the Services are capable of adequately assessing this “objective” information to make an accurate conclusion, and that this information can reveal to a degree of certainty

environmental effect of the subject action. *Hanley v. Kleindienst*, 471 F.2d 823 (2d Cir. 1972), *cert. denied*, 412 U.S. 908 (1973).

69. NEPA Regulations, 40 C.F.R. §§ 1500.3, 1500.5(1), 1501.4(e), 1504(q), 1508.13.

70. *Id.*

71. *See* Karkkainen, *supra* note 65, at 918-19. Karkkainen suggests that the time and cost demands entailed in preparing an EIS have increasingly led agencies to characterize their actions so as to avoid NEPA’s EIS requirements. *Id.* The EIS process can take an average of 3.6 years to complete with some taking up to 12 years. *Id.* They are generally hundreds to thousands of pages in length. *Id.*

72. COUNCIL OF ENVTL. QUALITY, *THE NATIONAL ENVIRONMENTAL POLICY ACT: A STUDY OF ITS EFFECTIVENESS AFTER 25 YEARS* 19 (1996). Because EAs avoid the opportunity for public comment, FONSI determinations are the most common source of conflict and litigation under NEPA. *Id.* Another trend is that if an agency finds impacts that are “significant” while preparing an EA, it will propose mitigation measures and then issue a FONSI, in essence redefining the project to avoid the EIS process. *Id.* Again, many scrutinize “mitigated FONSI’s” because they escape public involvement in the decision-making process. *Id.* Moreover, although some courts find an agency’s failure to prepare an EIS arbitrary and capricious, they generally defer to the agency’s judgment. *E.g.*, *Greenpeace Action v. Franklin*, 982 F.2d 1342, 1350 (9th Cir. 1992) (concluding that “when a litigant challenges an agency determination on grounds that, in essence, allege that the agency’s ‘expert review . . . was incomplete, inconclusive, or inaccurate,’ . . . the greater degree of deference expressed by the arbitrary and capricious standard is appropriate” (citing *Marsh v. Or. Natural Res.*, 490 U.S. 360, 377 n.23 (1989))).

73. ESA § 4(b)(1)(a), 16 U.S.C. § 1533(b)(1)(a) (2000).

whether and to what extent the value of a listed species may be diminished.⁷⁴

Moreover, the Services' pattern of ESA determinations over the course of the Act's history evidences the Services' overall confidence in the listed species' ability to withstand considerable human impacts. Again, the ESA cognizes an environmental injury when a private party "takes" or a federal government action "jeopardizes" a listed species.⁷⁵ The exception mechanism for private actions authorizes the Services to issue ITPs if an applicant demonstrates that the take will "not appreciably reduce the likelihood of the [species'] survival and recovery" and that "the applicant will to the maximum extent practicable, minimize and mitigate the impacts."⁷⁶

The Services rarely reject ITP applications, because they are easily convinced that mitigation and restoration efforts will safeguard the species as a whole from the proposed take.⁷⁷ Likewise, with regard to government actions, an injury, or jeopardy, is found only when mitigation or restoration efforts are considered unlikely to safeguard the species.⁷⁸

Furthermore, a jeopardy determination may be renounced if "reasonable and prudent alternatives" are adopted to sufficiently mitigate harm to the species.⁷⁹ Governmental data reveals that over ninety percent of consultations on federal agency actions have resulted in "no jeopardy" determinations and that in ninety percent of the cases where jeopardy was found "reasonable and prudent alternatives" were adopted.⁸⁰ The Services' practice of unreservedly issuing ITPs for private actions and overwhelmingly finding "no jeopardy" for federal government actions suggest they, and the data they assess, presuppose that the value of listed species remains unaffected by considerable human impacts or can fully be repaired by restoration efforts.

Overall, the frameworks of NEPA and the ESA reveal a general belief that scientific and other quantifiable data can provide a

74. *See, e.g.*, *Greenpeace v. Nat'l Marine Fisheries Serv.*, 237 F. Supp. 2d 1181, 1203-34 (W.D. Wash. 2002) (holding that NMFS's finding of no jeopardy on the Steller Sea Lions was arbitrary based on an inadequate assessment of scientific data).

75. ESA § 9(a)(1), 16 U.S.C. § 1538(a)(1).

76. ESA § 10(a)(2)(A)(iv), (a)(2)(B)(ii), 16 U.S.C. § 1539(a)(2)(A)(iv), (a)(2)(B)(ii).

77. Parenteau, *supra* note 45, at 272; *see also* Kostyack, *supra* note 45, at 21. Such measures may include transferring members of the species from the applicant's land to other suitable habitat or creating habitat elsewhere and artificially propagating the species to maintain a viable population.

78. Parenteau, *supra* note 45, at 270.

79. *Id.* at 268.

80. *Id.* at 270 (citing U.S. GEN. ACCOUNTING OFFICE, *ENDANGERED SPECIES ACT: TYPES AND NUMBER OF IMPLEMENTING ACTIONS* 26 (1992)).

comprehensive picture of the value of an environmental component, and therefore, such information is deemed an adequate source for making environmental injury determinations. In addition, these environmental statutes elicit a sense of confidence that environmental agencies can accurately assess this objective information and make “rational” determinations with a degree of certainty as to whether and to what extent the value of the environmental component may be diminished by prospective human actions. Finally, the trends of environmental injury determinations made by agencies pursuant to NEPA and ESA demonstrate that agencies—and the information they assess—presuppose that the environment is amenable to the demands of economic and industrial development. Any error or degree of uncertainty is resolved in favor of the environment’s resilience, rather than in favor of precaution.

C. Emphasizes Private Property Entitlements and Individual Liberty over the Greater Interests of the Community

One final overriding characteristic of contemporary environmental statutes and doctrines is that they are primarily grounded in theories of entitlement and principles of individual liberty. In essence, the permit schemes embodied in many contemporary environmental statutes bestow upon permit holders an entitlement to injure the environment.⁸¹ Moreover, only those persons who have a direct and concrete interest in the subject environmental component—namely a legally recognized property interest—are entitled to assert environmental injury claims.⁸² At the heart of these entitlement theories lie principles of individual liberty. As such, the application of many environmental statutory schemes is nearly equivalent to a free-market barter system between one property owner’s right to be free from pollution and another’s right to pollute that which she owns. The interest of the community as a whole has largely been left out of the transaction.

The legal concept of an environmental injury is rooted in common law tort doctrines involving the invasion of property rights. In particular, the common law nuisance doctrine protects private and public rights to be free from activities, including pollution, that interfere with the “use and enjoyment” of real property or threaten the public’s health and

81. Gerald Torres, *Who Owns the Sky*, 19 PACE ENVTL. L. REV. 515, 559 (2002) (concluding that under current emissions trading schemes, polluters can avoid potential enforcement actions by purchasing the right to pollute).

82. *Id.* at 523-24.

welfare.⁸³ In determining whether a private or public nuisance claim will prevail, courts engage in a two-part inquiry that considers: (1) whether the plaintiff has a legally protected property interest and (2) whether that interest was substantially harmed.⁸⁴ Only property owners are entitled to seek a remedy for a private nuisance claim and only public officials or private parties with “special interests” can bring public nuisance claims.⁸⁵ Special interests are those that are different in kind from those suffered by the public and are generally based on the plaintiff’s geographic proximity to the nuisance.⁸⁶ Property rights are thereby often a prerequisite for common law nuisance or environmental injury claims; without a legally recognizable property interest there is no injury.⁸⁷

Upon finding both a sufficient interest and a substantial harm, courts traditionally enjoined the activity causing the subject environmental injury, regardless of the hardship to the defendant. In 1970, however, the New York Court of Appeals initiated a reform of this remedy in the interest of balancing the public’s interest in a healthy environment with that of the economic and social utility of industrial development.⁸⁸ In *Boomer v. Atlanta Cement Co.*, the court held that the defendant could avoid an injunction by paying the plaintiff permanent damages to compensate past, present, and future losses caused by the nuisance.⁸⁹ In other words, the court gave the defendant the option of purchasing a servitude on the plaintiff’s land consisting of the portion of the plaintiff’s “use and enjoyment” interests injured by the defendant’s nuisance.⁹⁰ This remedy popularized by the court in *Boomer* effectively turned the plaintiff’s nuisance claim into a transferable property interest—namely, a right to “injure” a portion of the plaintiff’s property for a negotiated rate.⁹¹

83. *Id.* at 554.

84. See H. Marlow Green, *Common Law, Property Rights and the Environment: A Comparative Analysis of Historical Developments in the United States and England and a Model for the Future*, 30 CORNELL INT’L L.J. 541, 561 (1997).

85. Torres, *supra* note 81, at 554.

86. *Id.*

87. *Id.*

88. *Boomer v. Atlanta Cement Co.*, 257 N.E.2d 870 (N.Y. 1970). In *Boomer*, the property owner sued a neighboring cement plant operator to enjoin air pollution emissions. *Id.*

89. *Id.* at 875.

90. *Id.* (citing *United States v. Causby*, 328 U.S. 256, 261-62, 267 (1947) (applying the “servitude on land” nuisance theory)); see also Torres, *supra* note 81, at 552.

91. The *Boomer* court’s analysis is often linked to the economic theory of Ronald Coase, which maintains that legal rules such as injunctions are less effective than free market forces. Torres, *supra* note 81, at 560-61 (discussing Ronald Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 2 (1960)). According to the Coase theorem, the free market will move the right to the highest valued use so long as transaction costs—e.g., obtaining info, negotiating terms and

This economic based entitlement theory is rooted in principles of individual liberty. The option to pay damages instead of being subject to an injunction preserves the freedom of both the individual plaintiff and the individual defendant to enter a voluntary exchange of the property right according to their negotiated valuations.⁹² In this sense, the contemporary nuisance theory: (1) endorses the freedom to injure the environment and (2) grants individuals a legally protected property interest and the freedom to decide whether money damages can compensate them for that injury. Overall, it discourages legal rules that inhibit this voluntary exchange, particularly environmental laws that embrace the objective of protecting the greater community's interest in the subject environmental component.⁹³

Although nuisance claims are available at the state level, federal courts have held that federal environmental statutory frameworks, including the CAA and CWA, displace and thus preclude federal common law nuisance claims.⁹⁴ Nonetheless, these and other federal environmental statutes and doctrines are grounded in theories of entitlement and principles of individual liberty, mirroring the contemporary nuisance doctrine.

The permit schemes within many environmental statutes, including the CAA, the CWA and the ESA, in effect bestow upon permit-holders the right to adversely impact the environment up to the amount allotted under the applicable standard.⁹⁵ Given this right, the permit-holder is immune from a legal challenge, regardless of the extent of the impact, so long as the permit requirements are met. Statutorily cognized environmental injuries thereby reflect a contrived point beyond the permitted entitlements.

Moreover, the emission trading schemes currently implemented under the CAA and recently proposed for the CWA convert these

enforcing bargains—are low. *Id.* Coase contends that allowing parties to bargain for the right to engage in or enjoin another from engaging in an activity encourages parties to settle on mutually favorable prices, and in effect natural resources are allocated to the betterment of both parties and of society as a whole. *Id.*

92. See Green, *supra* note 84, at 574.

93. See Torres, *supra* note 81, at 552-53.

94. See *id.* at 554 (discussing the adverse affect of this preclusion, as federal common law nuisance claims were superior to state claims because they provided a means for adjudicating interstate disputes, which are inevitable given that air and water pollution travels without consideration of jurisdictional boundaries).

95. As discussed *supra* Part II.B, the permit standards are generally based on technological or economic feasibility and the permit allotments reflect the presupposition that the environmental resource is quite resilient.

entitlements to pollute into transferable commodities.⁹⁶ Emission trading programs allow polluters to bargain with each other to shift the right to pollute to the party willing to pay the most—purportedly the highest valued use.⁹⁷ Those without such rights are left out of the bargaining transaction.⁹⁸ On the other hand, permit holders that are either unable to obtain an environmental permit or consider their permitted allotment too limited, often argue that environmental statutory restrictions infringe on their individual liberty rights to engage in activities on their own property.⁹⁹

A separate but related issue is the judicial standing doctrine as applied to environmental cases. Although many environmental statutes, including the CAA, the CWA, and the ESA, contain provisions authorizing citizens to bring judicial actions to enforce permits and other statutory environmental requirements,¹⁰⁰ courts have consistently limited the scope of such “citizen suit provisions” by strictly construing the standing doctrine.¹⁰¹ The standing doctrine is derived from the “case or controversy” requirement for federal jurisdiction set forth in Article III of the United States Constitution.¹⁰² The doctrine insists that only persons who have suffered, or will likely suffer, an injury may bring legal challenges in federal court.¹⁰³ Although courts have granted standing for nonperson corporations and organizations, they have rejected the contention that environmental components themselves may have standing.¹⁰⁴ Rather, environmental standing is found only if a plaintiff—

96. U.S. EPA, OFFICE OF WATER, WATER QUALITY TRADING POLICY (Jan. 13, 2003); *see also* Torres, *supra* note 81, at 559.

97. U.S. EPA, OFFICE OF WATER, *supra* note 96.

98. *Id.*

99. For example, private landowners staunchly criticize the ESA because it regulates their private actions—prohibiting their freedom to engage in activities on their own property. Many assert that this regulatory constraint rises to the level of a prohibited “taking” under the constitutional doctrine of eminent domain. *E.g.*, Dan Tarlock, *The Future of Environmental ‘Rule of Law’ Litigation*, 17 PACE ENVTL. L. REV. 237, 257 (2000) (arguing that protecting biodiversity impinges on individual liberty and property rights, including “the right to fair and consistent treatment by the government”).

100. CAA § 304(d), 42 U.S.C. § 7604(d) (2000); ESA § 11(g), 16 U.S.C. § 1540(g) (2000); CWA § 505, 33 U.S.C. § 1365 (2000). Where statutes do not contain “citizen suit” provisions, parties can challenge final actions of environmental agencies pursuant to the Administrative Procedure Act, 5 U.S.C. § 702 (2000).

101. *E.g.*, *Lujan v. Defenders of Wildlife*, 504 U.S. 555 (1992).

102. U.S. CONST. art. III, § 2.

103. *Defenders of Wildlife*, 504 U.S. at 560-61.

104. *E.g.*, *Sierra Club v. Morton*, 405 U.S. 727, 731-32 (1972). In *Morton*, the Court rejected Sierra Club’s complaint filed on behalf of Mineral King, a national game refuge and forest, on grounds of standing, explaining:

whether human, corporation, or organization—can adequately evidence that the injury to the environment has, in essence, injured that plaintiff.¹⁰⁵ The Supreme Court has explained that to have standing a plaintiff must have suffered an “injury in fact,” which is an invasion of a legally protected interest that is (1) concrete and particularized and (2) actual or imminent, not conjectural or hypothetical.¹⁰⁶ A court will deny standing to plaintiffs whose interest in an alleged injured environmental component is what the court considers a mere “general grievance,” wherein the environmental injury does not adversely impact the plaintiff in some special and significant way.¹⁰⁷ Factors a court is to consider in an environmental case include the plaintiff’s geographic proximity to, and ongoing use and enjoyment of, the environmental component.¹⁰⁸ Hence, just as in common law nuisance claims, federal courts require citizens to assert a special injury for federal environmental injury claims, which is often tied to property interests.¹⁰⁹ Although the Supreme Court’s more

It does serve as at least a rough attempt to put the decision as to whether review will be sought in the hands of those who have a direct stake in the outcome. That goal would be undermined were we to construe the APA to authorize judicial review at the behest of organizations or individuals who seek to do no more than vindicate their own value preferences through the judicial process.

Id. at 740. In his article *Should Trees Have Standing?—Toward Legal Rights for Natural Objects*, 45 S. CAL. L. REV. 450, 468 (1972), Christopher Stone referred to *Morton* while it was pending before the Court, and argued that environmental components should have standing. In his dissent in *Morton*, Justice Douglas cited Stone’s article and expressed his belief that the environment should have standing on its own right, just as ships and other inanimate objects:

So it should be as respects valleys, alpine meadows, rivers, lakes, estuaries, beaches, ridges, groves of trees, swampland, or even air that feels the destructive pressures of modern technology and modern life. The river, for example, is the living symbol of all the life it sustains or nourishes—fish, aquatic insects, water ouzels, otter, fisher, deer, elk, bear, and all other animals, including man, who are dependent on it or who enjoy it for its sight, its sound, or its life. The river as plaintiff speaks for the ecological unit of life that is part of it.

Morton, 405 U.S. at 743 (Douglas, J., dissenting).

105. *Morton*, 405 U.S. at 734-35.

106. *Friends of the Earth v. Laidlaw Envtl. Serv., Inc.*, 528 U.S. 167 (2000); *Lujan v. Defenders of Wildlife*, 504 U.S. 555 (1992). The other two requirements of standing are: the injury is fairly traceable to the challenged action of the defendant; and it is likely, as opposed to merely speculative, that the injury will be redressed by a favorable decision. *Laidlaw*, 528 U.S. at 180-81. However, these are beyond the scope of this Article.

107. *See Defenders of Wildlife*, 504 U.S. at 573-74.

108. *Id.*

109. *Id.* at 579, 594 (Blackmun, J., dissenting). The plurality in *Defenders of Wildlife*, as reflected in Justice Kennedy’s concurrence, indicated a desire to shift away from the common law model of standing:

As Government programs and policies become more complex and far reaching, we must be sensitive to the articulation of new rights of action that do not have clear analogs in our common-law tradition. . . . In my view, Congress has the power to

recent environmental standing jurisprudence suggests a less scrutinizing “injury-in-fact” threshold, environmental plaintiffs still face a tough burden for getting their claims through the courtroom door.¹¹⁰

In sum, the judicial restrictions on a citizen’s opportunity to enforce environmental statutory requirements on behalf of the environment or greater community have elevated the rights of individual permit holders above the interests of the public as a whole. This has particularly significant consequences in the context of pollution trading schemes, as one critic of the CAA’s exchange system explains:

Emission trading allows polluters to sell pollution rights to each other. Thus two potential defendants bargain over the price of an entitlement that may immunize the holder from an enforcement action. Absent a strong citizen suit provision, however, members of the public, those the Clean Air Act is meant to protect, are left out of the bargain. Emission trading protects the direct financial interests of polluters at the expense of the citizens who could otherwise enjoin excessive emissions. Except where the government is selling allowances, the public, the real party in interest, receives none of the profits flowing from the sale of his or her entitlement.¹¹¹

In all environmental statutes, standing limitations on a citizen’s ability to judicially challenge government and private actions on the basis

define injuries and articulate chains of causation that will give rise to a case or controversy where none existed before

Id. at 580 (Kennedy, J., concurring); William W. Buzbee, *Standing and the Statutory Universe*, 11 DUKE ENVTL. L. & POL’Y F. 247 (2002) (suggesting that the Court’s more recent holding in *Laidlaw* embraces the shift away from the common law doctrine of standing).

110. See *Laidlaw*, 528 U.S. at 181-85; see also Buzbee, *supra* note 109, at 284; Daniel Farber, *Environmental Litigation After Laidlaw*, 30 ENVTL. L. REP. 10, 516 (1999) (“[I]t remains true that the Court’s devotion to the dispute resolution function, and the accompanying requirements of injury and redressability, will complicate and to some extent undermine the public law function of environmental litigation. Smoothing over the conflicts between the needs of the regulatory system and even *Laidlaw*’s milder version of standing is the next task that confronts us.”).

111. Torres, *supra* note 81, at 569-70. Torres explains further:

The effects of trading schemes compound the injury that results from a limitation of the citizen suit provisions. Under the emissions trading program a utility can legally emit as much pollution as it wants . . . as long as it buys enough allowances to guarantee its pollution entitlements. This effectively deprives citizens of the ability to enjoin such excessive pollution via the enforcement action, and fails to compensate them for this divestiture of their property right in the nuisance action that was functionally replaced by the citizen’s suit provision. Thus, the current emissions trading program effectively transfers the citizen’s entitlement to the utility owners, who in turn trade these entitlements for cash and realize significant financial benefits. These benefits may or may not be passed on to the utilities’ ratepayers.

Id. at 559.

of environmental impacts that are earnestly objectionable to them constrict the legal concept of environmental injury to shortsighted individual interests. The requirement that an individual have “concrete and particularized” interests renders the concept of “environmental injury” under-inclusive, as it leaves dispersed yet widely felt environmental impacts unchecked.¹¹²

While the above description is neither inclusive nor exhaustive of the legal concept of environmental injuries, it reveals that contemporary federal environmental statutes and doctrines share three underlying characteristics. First, their declared purpose of protecting environmental quality is primarily motivated by anthropocentric interests and, even still, they reflect an unsubstantiated commitment to this purpose by basing environmental injuries on economic and technological concerns of industry rather than impairments to environmental quality. Second, they elicit a sense of confidence in scientific and other methodical data as a sufficient source for making environmental injury determinations while endorsing agency determinations that presuppose the environment’s capacity to withstand considerable human impacts. Finally, they ground the concept of environmental injury in theories of entitlement and principles of individual liberty, leaving the greater community out of the bargaining process. These three characteristics at once outline the legal concept of environmental injury and signify Alexander’s three fallacies of contemporary jurisprudence.

III. THREE FALLACIES OF THE CONTEMPORARY LEGAL CONCEPT OF ENVIRONMENTAL INJURY

Alexander identifies teleological confusion, epistemological arrogance, and ontological error as the three fallacies of contemporary jurisprudence.¹¹³ He roots each of these normative misconceptions in the growing prevalence of liberal rationalism in Western thought, which emphasizes principles of individual autonomy and the dominance of human reason above all else.¹¹⁴

112. *See, e.g.*, *Lujan v. Nat’l Wildlife Fed’n*, 497 U.S. 871 (1990).

113. Alexander, *supra* note 9, at 2.

114. *Id.* at 12. Alexander explains:

During the seventeenth century, these conceptions of the individual as an autonomous entity and of individual reason as ultimate authority became the determinate criteria for Western theories of law. Reason and rationality became the highest tests for truth, and the authority of law became simply a derivative of individual freedom and individual rights. The individualism and rationalism of the Enlightenment have degenerated, however, into a relativism which is found in the twentieth century jurisprudential emphasis on objective verification.

In the context of the environment, American philosopher Alfred North Whitehead described this phenomenon most succinctly in his 1925 article *Science and the Modern World*.¹¹⁵ Whitehead maintained that unrestrained individualism and the mechanistic nature of science reduced our approach to environmental problems to “one eyed reason, deficient in its vision and depth.”¹¹⁶ Whitehead warned that the scientific methods of analysis would have grave moral consequences—as they rendered irrelevant the more subjective realms of value, ethics and beauty.¹¹⁷

Liberal rationalism has continued to engulf the contemporary legal concept of environmental injury, as normative dimensions have been dismissed in the interest of objectively verifiable scientific and economic formulas. Revisiting normative questions concerning the purpose of the earth’s creation, the source and limits of human knowledge, and the relation between humans and the environment can enlighten our understanding of human impacts on the environment, and ought to inform our legal endeavors and dialogue addressing environmental injuries.¹¹⁸

A. *Teleological Confusion*

The teleological question, as posed by Alexander, addresses the validity of law in terms of final or ultimate ends.¹¹⁹ A teleological perspective uncovers the underlying purpose of not just particular statutes or doctrines, or positive laws, but of the general “phenomenon of law.”¹²⁰ The validity of law in this deeper sense is contingent upon “convictions about the ultimate ends or purposes of the human community.”¹²¹ Alexander contends that contemporary theories of law fail to adequately address this conjunction between the ultimate purpose and validity of law, but rather rest their validity on “narrow, objective and short term ends” that are derived from the perceived authority of “individual autonomy, human reason and political sovereignty.”¹²²

Id.

115. WHITEHEAD, *supra* note *, at 86.

116. See DONALD WORSTER, *NATURE’S ECONOMY—A HISTORY OF ECOLOGICAL IDEAS* 318 (1994) (quoting WHITEHEAD, *supra* note *, at 86).

117. *Id.* at 318-19.

118. See generally GUTMANN & THOMPSON, *supra* note 14; Maiese, *supra* note 14.

119. See Alexander, *supra* note 9, at 28.

120. *Id.*

121. *Id.* at 29.

122. *Id.* at 31.

1. Teleological Fallacy of Contemporary Environmental Jurisprudence

In the context of environmental jurisprudence, the teleological perspective reflects convictions about nature and the ultimate purpose of human presence on earth, or responses to Glacken's inquiry: "Is the earth, which is obviously a fit environment for man and other organic life, a purposefully made creation?"¹²³ Throughout the history of Western thought, the prevailing conviction has been that the purpose of the earth's creation is to serve human ends. Under this anthropocentric view, nonhuman components of the environment are perceived as having either solely an instrumental value, or an intrinsic value that is less than that of humans. As such, environmental injuries resulting from human interests or well-being are almost always justified.¹²⁴ Intrinsic value, as compared to instrumental value, is when something is deemed to have value as an end "in itself" and not a means for something else.¹²⁵

The view that the environment was created primarily to serve human ends is deeply embedded in Western theology and philosophy. The Biblical story of creation is often cited for authorizing human dominion over nature: "God created man in his own image . . . male and female . . . and God said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it: and have dominion over fish of the sea, and over fowl of the air, and over every living thing that moveth upon the earth."¹²⁶ In similar effect, the natural law theory of Thomas Aquinas maintained that nonhuman animals are "ordered to man's use."¹²⁷ Even Aristotle insisted that "nature has made all things specifically for the sake of man."¹²⁸ And, although Immanuel Kant extended his do-no-harm principle to animal cruelty, he instrumentally linked this principle to the human sense of duty to develop a moral character: "Animals are not self-conscious and are there merely as a means to an end. That end is man."¹²⁹

123. GLACKEN, *supra* note 5, at i.

124. See Andrew Brennan & Yeuk-Szo Lo, *Environmental Ethics*, in STANFORD ENCYCLOPEDIA OF PHILOSOPHY (2002), at <http://plato.stanford.edu/entries/ethics-environmental/> (last modified June 3, 2002).

125. This is significantly distinguished from having value "for itself." J. Baird Callicott, *On the Intrinsic Value of Nonhuman Species*, in THE PRESERVATION OF SPECIES 142 (Bryan G. Norton ed., 1986). Value in itself includes relational value to other individuals and the whole. *Id.*

126. Brennan & Lo, *supra* note 124 (citing *Genesis* 1:27-28).

127. *Id.* (citing THOMAS AQUINAS, SUMMA CONTRA GENTILES, bk. 3, pt. 2, ch. 112 (Blackfriars trans., 1963)).

128. *Id.* (citing ARISTOTLE, POLITICS, bk. 1, ch. 8 (R. McKeon ed., 1941)).

129. Tribe, *supra* note 11, at 1330 n.73 (quoting Immanuel Kant, *Duties to Animals and Spirits*, in LECTURES ON ETHICS 239 (L. Infield trans., 1963)).

The declared purposes of contemporary environmental statutes and doctrines mirror these deep seated teleological convictions, as evidenced in the preceding discussion. The nation's environmental laws primarily serve human purposes, as they regulate human behavior in a manner that prevents or restores only those injuries to the environment that are objectionable to human interests. Inasmuch as the validity of environmental injury standards is grounded in an anthropocentric perspective, the legal concept of environmental injury is defined in terms of "narrow, objective and short-term ends," i.e., standards dictated by economic and technological feasibility, which are motivated by "individual autonomy, human reason and political sovereignty."¹³⁰ The fallacy of this anthropocentric teleology lies in the possibility that the ultimate purpose is not for human's sake. Normative critiques of this predominant perspective shed light on the consequences of the teleological fallacy embedded within anthropocentrism, and offer possibilities for an alternative outlook.

2. Normative Critiques of an Anthropocentric Teleology

During the early 1970s, at the same time Congress adopted many of the nation's major environmental statutes, environmental ethics began to emerge as a new branch of philosophy. Although theorists have taken various approaches, a central aim of environmental ethics has been to challenge the traditional anthropocentric perspective and to uncover new ways of thinking about how to value nonhuman components of the environment.¹³¹ Opponents of anthropocentrism insist that humans should see themselves in a broader scope: "[t]o ignore the world, ante- and/or posthuman, is to be seriously unhistorical and unscientific, and a philosophy of human chauvinism erected on such flawed understanding cannot be an adequate philosophy—minimally, it fails the test of comprehensiveness."¹³² Indeed, an anthropocentric perspective disregards the earth's extensive history. The earth has existed for more than 3.5 billion years, well before the appearance of the human species a mere 10,000 years ago and it will likely outlast humanity.¹³³ Darwin's theory of evolution reveals that nonhuman species throughout history—including

130. Alexander, *supra* note 9, at 31.

131. Clare Palmer, *An Overview of Environmental Ethics*, in ENVIRONMENTAL ETHICS: AN ANTHOLOGY 175 (Andrew Light & Holmes Rolston III eds., 2002). The latter inquiry deals more with the epistemological question. See discussion *infra* Part III.B.

132. Keekok Lee, *The Source and Locus of Intrinsic Value in Environmental Ethics*, in ENVIRONMENTAL ETHICS: AN ANTHOLOGY, *supra* note 131, at 157.

133. Christian de Duve, *The Beginnings of Life on Earth*, AM. SCI., Sept. 1995, at 428.

pre-humans—have manifested independent interests in maintaining their natural processes and genetic diversity, or “goods for their own ends.”¹³⁴ This historical and scientific evidence supports the philosophical premise that the environment serves a purpose outside the scope of human interests and existence.

Laurence Tribe was one of the earliest legal theorists to challenge the anthropocentric perspective, which he identified as both the root of the unprecedented deterioration of the environment and the foundation of contemporary environmental jurisprudence. In his 1974 article, *Ways Not to Think About Plastic Trees: New Foundations for Environmental Law (Plastic Trees)*, Tribe places blame for the environmental crisis on the “secularization of transcendence,” the point at which the Judeo-Christian consciousness of an “other worldly God” was espoused by the Baconian creed that human reason and science validates technological domination over nature.¹³⁵ *Plastic Trees* appeals us to once again recognize that there is a source of moral authority beyond human will.¹³⁶

According to Tribe, the conversion of all values into human-centered terms leads to two distortions: “[f]irst, an inchoate sense of obligation toward natural objects is flattened into an aspect of self-interest; second, value discontinuities tend to be foreshortened.”¹³⁷ Tribe’s two distortions parallel Alexander’s noted consequences of the teleological confusion—namely, that the validity of law is governed by individual autonomy, human reason and political sovereignty, and is based solely on narrow, objective and short term ends.¹³⁸ Recognizing that contemporary environmental jurisprudence is rooted in this distorted teleology, Tribe concludes that “[t]raditional conceptions of nature and of the natural will not suffice to capture the necessary objects of our respect and of our sense of obligation.”¹³⁹ In this 1974 article, however, Tribe

134. ROBERT ELLIOTT, *FAKING NATURE: THE ETHICS OF ENVIRONMENTAL RESTORATION* 125 (1997) (“What is significant about wild nature is its causal continuity with the past, its relationship with an evolving series or sequence of states that are the products of natural forces.”). This leads to the epistemological question of how we can know and assess the intrinsic value of nonhuman species. See discussion *infra* Part III.B.

135. Tribe, *supra* note 11, at 1333-34; see also discussion *infra* Part III.B.

136. Tribe explains, “for when God is absent, the ‘grand manipulator’ must move the world not according to values divinely revealed, but in accord with ends ultimately private to each person and empty of intrinsic significance because not derived through any dialogue beyond the self.” Tribe, *supra* note 11, at 1334; see also SOREN KIERKEGAARD, *FEAR AND TREMBLING* 49 (Walter Lowrie trans., 1954) (pointing to the story of Abraham’s hesitation to sacrifice his son Isaac on God’s command to boldly convey the reality that humans are morally offended when God’s will conflicts with our understanding of what is good and bad for us).

137. Tribe, *supra* note 11, at 1332.

138. See Alexander, *supra* note 9, at 31.

139. Tribe, *supra* note 11, at 1340.

expresses optimism in the then increasing effort to develop and embrace alternative teleological perspectives.¹⁴⁰

3. Alternatives to the Anthropocentric Perspective

Although anthropocentrism has been the prevailing view throughout Western thought, it has not been without criticism. The Judeo-Christian tradition is often regarded as the foundation for the anthropocentric perspective.¹⁴¹ However, both traditional and contemporary Judeo-Christian theologians have promoted antithesis views. Thomas Aquinas identified human capacity to reason, not power, as the virtue that distinguished humans from animals.¹⁴² Our ability and obligation to reason elicits a stewardship ethic that insists that humans have a responsibility to take care of the environment. Contemporary Judeo-Christian theologians, including James Gustafson, emphasize this stewardship ideal by advocating for a feeling of reverence toward the nonhuman environment.¹⁴³ In *Ethics from a Theocentric Perspective*, Gustafson condemns the anthropocentric perspective for arrogantly implying that the purpose of all life, or the Divine determination of events, is for the sake of humans and is thus for the human benefit above all else, including the Divine's.¹⁴⁴ Gustafson proposes a more "theocentric" perspective in which God, not the human species, is the center through which all things are interconnected. As interdependent participants in the patterns and processes of life, Gustafson maintains that we are to "relate [ourselves] and all things in a manner appropriate to their relations to God."¹⁴⁵ Gustafson contends that inasmuch as the Divine has judged nature as good and that humans are merely one interrelated part of the whole that was created by and for the Divine, humans are misguided to consider themselves the ultimate end and authority.¹⁴⁶

140. See *id.* at 1346-48.

141. *Id.* at 1333, see also Lynn White, *The Historical Roots of Our Ecological Crisis*, 134 SCIENCE 1203-05 (1977); JOHN PASSMORE, MAN'S RESPONSIBILITY FOR NATURE 3-27 (1974); 1 JAMES GUSTAFSON, ETHICS FROM A THEOCENTRIC PERSPECTIVE 46 (1981).

142. See THOMAS AQUINAS, SUMMA THEOLOGIA, pt. I, q. 3, art. 1, q. 96, art. 2 (Blackfriars trans., 1963).

143. See 1 GUSTAFSON, *supra* note 141, at 46. See generally WENDELL BERRY, WHAT ARE PEOPLE FOR? (1990).

144. 1 GUSTAFSON, *supra* note 141, at 267-68.

145. *Id.* at 199.

146. *Id.* at 279. Gustafson emphasizes the Calvinist notion of an "exceedingly powerful" God and highlights Calvin's sense of obligation and duty in this world: "If God has committed the care and protection of life to us, it is our duty to care for it and protect it . . ." *Id.* at 166. Moreover, Gustafson believes that human activity must be properly ordered based on what we

Although the notion that there is a purpose and authority outside of human will implies a divine dimension, environmental philosophers have endeavored to formulate an alternative to anthropocentrism without theological undertones. Aldo Leopold's land ethic and J. Baird Callicott's notion of holism are examples of an alternative ecocentric perspective.¹⁴⁷ These philosophical theories maintain that the ultimate purpose lies in the systematic "whole" of the earth or universe, which itself is greater than the sum of its parts. Generally, an ecocentric perspective is rooted in Darwinian ecological and evolutionary considerations, which reveal the under-workings of a system with interrelated and interdependent parts and processes extending beyond the scope of any single part's existence. Hence, the ultimate purpose cannot be for the sake of humans, as we are merely one inseparable part of the whole. An ecocentric perspective avows that moral authority lies within the interests of the community, including those of nonhuman communities, rather than within the interests of individuals. In this sense, ecocentric theories ground notions of the ultimate purpose in the relations of and dependency between parts that make up the whole.¹⁴⁸

know about God. *Id.* Like Aquinas, he believes that nature is a source of knowledge for God. *Id.* Because of the increased technological intervention by humans, however, nature cannot provide a "blueprint" for human action and thus Aquinas' natural law theory of hierarchy is no longer sufficient. *Id.* at 321; *see also* Patrick Halligan, *The Environmental Policy of Saint Thomas Aquinas*, 19 ENVTL. L. 767, 776 (1989) (citing 1 THOMAS AQUINAS, SUMMA THEOLOGICA 116-17 (pt. I, q. 20, art. 4), 125-26, 325-26 (Fathers of the English Dominican Province trans., 1947) (asserting that God judged nature as good)). Fundamentally for Gustafson, like Augustine, God is the right object of love, and if the right will is well directed to God, then all "[o]ther things will be loved in proper proportion to their place in God's ordering of things." 1 GUSTAFSON, *supra* note 141, at 300.

147. *See* Wendy Donner, *Callicott on Intrinsic Value and Moral Standing in Environmental Ethics*, in LAND, VALUE, COMMUNITY: CALLICOTT AND ENVIRONMENTAL PHILOSOPHY 99 (Wayne Ouderkirk & Jim Hill eds., 2002). Alternatively, Peter Singer and other advocates of the animal liberation movement argue that an individual animal has intrinsic value for itself in that it can experience pleasure or at least has an interest in avoiding pain. *See* PETER SINGER, ANIMAL LIBERATION 238-39 (1975); *see also* Michael Pollan, *An Animal's Place*, N.Y. TIMES (Magazine), Nov. 10, 2002, at 58. The animal rights perspective is often referred to as biocentrism, as opposed to ecocentrism, to reflect the individual interests of a single animal. In this sense, biocentrism has been criticized as having similar flaws as anthropocentrism. *See* Brennan & Lo, *supra* note 124. Conversely, ecocentrism embodies community and holistic interests and focuses on the relational values, which secondarily include the interests of individuals. *Id.* (citing J. Baird Callicott, *Animal Liberation and Environmental Ethics: Back Together Again*, in BEYOND THE LAND ETHIC: MORE ESSAYS IN ENVIRONMENTAL PHILOSOPHY 15-38 (1989)).

148. The ecocentric perspective, that we are part of, and inseparable from, the environment reveals that a revised teleology makes possible a new ontology. *See* discussion *infra* Part III.C. The teleological and ontological questions are themselves interrelated and interdependent—for as the purpose expands from an individual perspective to that of a greater community so does our sense of complicity.

4. A Nonanthropocentric Perspective and Contemporary Environmental Jurisprudence

In *Plastic Trees* Tribe concludes that although modes of explanation within positive environmental law are “not quite ready” for an ecocentric or other less egoistic teleological perspective, the growing sense that there is something sacred in the natural—which can be “wholly secular”—enhances the possibility of infusing contemporary environmental theories of law with consciously transformed notions of an ultimate purpose.¹⁴⁹ Tribe maintained, however, that this is contingent upon the recognition that human consciousness and will is evolving, and as such, we must commit to processes of change and pursue an evolving environmental ethic: “To be free, it seems, is to choose what we shall value . . . to make commitments without destroying freedom is to live by principles [outside ourselves] that are capable of evolution as we change in the process of pursuing them.”¹⁵⁰ These processes of action and choice, Tribe insists, “must embody a sense of reverence for whatever stands beyond human manipulation and its willed consequences, as well as a stance of criticism toward all that is given and a commitment to the conscious improvement of the world.”¹⁵¹

Acknowledging that our notions of an ultimate ideal are themselves evolving, Tribe’s appeal in *Plastic Trees* is toward committing to processes for critiquing and transforming the traditional teleological perspective embedded in contemporary environmental jurisprudence. Over the last three decades, however, centerline pragmatic approaches have been favored over normative considerations, and thus the latter have largely been squeezed out of the environmental policy arena.¹⁵² Consequently, environmental policymakers have continued to evade the

149. Tribe, *supra* note 11, at 1338 (citations omitted).

150. *Id.* at 1340.

151. *Id.*

152. See, e.g., Keith Hirokawa, *Some Pragmatic Observations About Radical Critique in Environmental Law*, 21 STAN. ENVTL. L.J. 225, 227 (2002) (arguing that “the challenge of integrating environmental ethics and law requires the pragmatic distrust of claims of ultimate truth and the replacement of that concept with a recognition of the importance of persuasion”). Hirokawa assigns Daniel Farber, Carol Rose, and Joseph Sax to the pragmatists’ camp—and maintains that the emphasis of persuasion embodied in pragmatism makes it a superior strategy to radical environmentalists’ critiques of the laws’ failure to incorporate principles of environmental ethics. *Id.*; see also Karkkainen, *supra* note 65, at 942–45 (urging a pragmatic approach for implementing NEPA, which includes mitigated FONSI in lieu of preparing full EISs); GUTMANN & THOMPSON, *supra* note 14; cf. Alyson C. Flournoy, *In Search of an Environmental Ethic*, 28 COLUM. J. ENVTL. L. 63 (2003) (suggesting that environmental laws and regulation can only be improved by a deeper discussion and consideration of underlying ethical implications and motivations).

fundamental teleological questions concerning whether and why humans ought to minimize injuries to the environment.¹⁵³ These questions have provoked human thought for centuries, and human nature—our quest for knowledge and understanding—precludes us from shutting our mind’s eye to them.

Suggesting that the contemporary legal concept of environmental injury can and should be enhanced by a normative teleological perspective does not imply that there are objective moral principles upon which we can agree.¹⁵⁴ And yet, certainty of disagreement as to ultimate purpose is not reason enough to recoil into pragmatic approaches, avoiding normative considerations.¹⁵⁵ Fundamentally, dialogue that inspires evolving normative convictions about the ultimate purpose or ends of the earth’s creation can generate a broader understanding of our place in it. In this sense, an ongoing normative inquiry can reveal a deeper validity for—and, in turn, encourage a stronger commitment to—laws protecting the environment, perhaps for its own sake, that are most appropriate for a given time and place.

The practical challenge is how to incorporate a nonanthropocentric or less egoistic teleology into theories of positive environmental law. Tribe acknowledged that “[t]he widely held view that law exists for the purpose of ordering human societies, and for that purpose alone, may well prove an unassailable article of faith.”¹⁵⁶ Presuming this to be true, the difficulty of instilling the law with an ecocentric or other normative environmental ethic lies in the fact that such a perspective fundamentally addresses the relations and ordering between humans and nonhuman communities, as well as relations among nonhuman communities alone. Moreover, an ecocentric perspective insists on extinguishing, or at least relegating, the dichotomy between humans and nonhuman components of the environment.

To appreciate the relation between normative teleological perspectives and positive environmental law, it is essential to recognize the various functions of the phenomenon of law. In this context, Alexander refers to Martin Luther’s doctrine of *Usus Legis*, which was one of the earliest formulations of the law’s distinct functions.¹⁵⁷ For

153. See Hirokawa, *supra* note 152, at 227-28.

154. See Alexander, *supra* note 9, at 28-29. This leads to the epistemological inquiry, which reveals limitations in human capacity to reason. See also discussion *infra* Part III.B.

155. See GUTMANN & THOMPSON, *supra* note 14.

156. Tribe, *supra* note 11, at 1329.

157. Alexander, *supra* note 9, at 30; Harold J. Berman & John Witte Jr., *The Transformation of Western Legal Philosophy in Lutheran Germany*, 62 S. CAL. L. REV. 1573,

Luther, the theological function uncovers humankind's self-righteous nature, which prevents us from recognizing the fallibility of human reason; its end is to reveal human limitations. Second, the political-civil function administers the positive laws that a society or community adopts to protect and facilitate relations; its end is to establish order. Finally, the didactic function inspires members of a community to do more than that which may require positive laws; its end is to reveal human potential. Although these three functions of law are distinct, they are interdependent in that each provides checks and balances on the others.¹⁵⁸ Alexander contends that these separate yet interrelated functions of law characterize a two-fold teleological confusion of contemporary jurisprudence: (1) contemporary jurisprudence fails to delineate the civil and didactic functions of law and (2) it refuses to recognize that the rule of law may have transcendent or normative elements.¹⁵⁹

First, when moral aspirations become obligatory, the civil function becomes a reflection of what is desirable rather than what is achievable.¹⁶⁰ In the field of environmental law, it would be an unacceptable option, for example, to mandate through civil laws the didactic aspirations embodied in the mantra "leave no trace," or the principle of minimizing human impact on the natural environment. By distinguishing the civil and didactic functions of the law, however, one can articulate a justification for positive legislation that regulates certain human activities to the extent that such binding legislation is necessary for preserving and creating conditions in which such aspirations can be pursued. Discerning what this necessarily entails at a given place and particular time can only be done through reasoned deliberation.¹⁶¹ Such reasoned deliberation

1609 (1989); see also Frank Alexander, *Validity and Function of Law: The Reformation Doctrine of Usus Legis*, 31 *MERCER L. REV.* 509, 509 (1980).

158. Alexander, *supra* note 9, at 30-31.

159. *Id.* at 31. The distinction between the civil and the didactic functions of law parallels the distinction between the moralities of duty and aspiration as explained by Lon Fuller. LON FULLER, *THE MORALITY OF LAW* 5 (1964). The morality of duty starts at the bottom of human achievement, laying down the basic rules essential for an ordered society. *Id.* The morality of aspiration starts at the top, reflecting a life of excellence or the fullest realization of human potential. *Id.* Although, Fuller observes there is no way by which the law can compel a man to live up to the excellences of which he is capable, the morality of duty is essential to counteract activities that threaten the conditions necessary for achieving that end. *Id.* at 12. The task of placing the "invisible pointer" between duty and the pursuit of excellence dominates "the whole field of moral argument," as it delimits the scope of binding legislation. *Id.* at 10. Fuller insists that we embrace this task, notwithstanding the epistemological limits to human knowledge of the morality of aspiration, as "[w]e know enough to create the conditions that will permit a man to lift himself upward. It is certainly better to do this than to try to pin him to the wall with a final articulation of his highest good." *Id.* at 12.

160. See Alexander, *supra* note 9, at 31-32.

161. *Id.* at 32.

must be animated by moral concerns, however, as determinations regarding what is technologically and economically achievable will fluctuate when normative convictions about the ultimate ideal—in this case what is environmentally desirable—evolve within a society or community. Maintaining a distinction between the civil and didactic use of the law also provides the opportunity for critiquing positive laws and holding them accountable to external authoritative principles.¹⁶²

Moreover, both the didactic and civil functions of the law are subject to the theological function, which, Alexander explains, “allows an acknowledgement of our limitations to create the possibility of greater awareness. In this conception, individual autonomy, human reason, and political sovereignty are consequently rejected as possible foundations of the ultimate authority of law.”¹⁶³ The theological function provides a check on the civil function by critiquing the righteousness of the state in discerning the line between duty and morality. The didactic use is also subject to the theological use by reminding the human community that it has a limited capacity to reason and understand morality—or in this context, to realize what is an ultimately desirable state of the environment. It is within this notion that the law is a work in progress, concerned about both what is and what ought to be, that it must be instilled with an evolving moral dimension.¹⁶⁴ For example, if we aspire toward an ultimate ideal that reflects an ecocentric perspective, positive legislation can extend a deeper consideration to principles of respecting the environment for its own sake.¹⁶⁵

The tension between present perceptions of technological and economic feasibility and what is a desirable state of the environment mirrors the tension between the civil and didactic functions of law. Indeed, the act of delineating between feasibility and desirability, or between the civil and didactic functions of law, is an evolving process that is dependent upon and must be in check with the ever-changing

162. See Alexander, *supra* note 157, at 527 (“Law becomes possible only by virtue of rules that are not law.” (quoting Lon Fuller, *Positivism and Fidelity to Law—A Reply to Professor Hart*, 71 HARV. L. REV. 630, 642 (1958))); see also Alexander, *supra* note 9, at 32 n.100 (explaining that the distinction between the civil and didactic uses of the law “prevents the collapse of legal principles into legal justification of positive law”).

163. Alexander, *supra* note 9, at 31.

164. Alexander, *supra* note 157, at 527.

165. This may not necessarily entail bestowing per se legal “rights,” including standing, to nonhuman beings and entities. Cf. Christopher Stone, *Should Trees Have Standing?—Toward Legal Rights for Natural Objects*, 45 S. CAL. L. REV. 450, 468 (1972); SINGER, *supra* note 147. Adopting an ethic of care and affording a deeper consideration for the greater community and other “wholes” may be more effective than further delineating rights to more parts. See discussion *infra* Part II.C.

purposive, or teleological, convictions of a given society. Such normative convictions come from a transcendent source or authority, whether based on a metaphysically ecocentric or theologically theocentric perspective, and in doing so they serve as a check on human limitations and fallibility. They provide a standard to assess the validity of positive law that is outside of human will.¹⁶⁶

In sum, transforming the didactic use of the law, or morality of aspiration, away from an anthropocentric perspective insists that our laws acknowledge that the earth is a purposeful creation, and that its purpose extends beyond the scope of human existence, interests, and our civil laws. To realize that human interests are not the ultimate purpose, and human reason is not the ultimate authority, allows us to acknowledge that our civil laws are limited. The didactic use of the law, however, serves to inspire us to uncover potentials we have yet to realize that we and our civil laws can encompass.

Without such motivation, our environmental statutes and policies will forever mandate the status quo, and will thus fail to at least progress toward achieving their underlying purpose of improving environmental quality. Standards such as “best available technology” and to the “maximum extent practicable” do not ultimately reflect a forward-looking conception of what is achievable, but rather are stagnated in a current, if not past, perception of traditional practices. Time and time again, industry lobbyists vehemently insist that quality-based environmental standards, which disregard their economic and technical interests, will result in their financial demise. But when these industries failed to halt such legislation and policies in the past, they have often succeeded in formulating technologies to meet these quality standards while also profiting.¹⁶⁷

Principally, environmental policymakers must engage in an ongoing dialogue regarding the underlying normative objectives of positive environmental law. They must be open to the possibility that under

166. Alexander, *supra* note 157, at 527.

167. For example, in his concurrence in *Whitman v. American Trucking Ass'n*, Justice Breyer commented:

Technology-forcing hopes can prove realistic. Those persons, for example, who opposed the 1970 [Clean Air] Act's insistence on a 90% reduction in auto emission pollutants, on the ground of excessive cost, saw the development of catalytic converter technology that helped achieve substantial reductions without the economic catastrophe that some had feared.

531 U.S. 457, 492 (2000) (Breyer, J., dissenting) (citations omitted); *see also* Alan Miller, *Cleaning the Air While Filling Corporate Coffers: Technology Forcing and Economic Growth*, 1990 ANN. SURV. AM. L. 69, 73-76.

certain circumstances we should commit to protecting environmental quality regardless of economic and technical concerns. In other words, policymakers must acknowledge that the value of environmental quality may not be ascertainable or adequately reflected in a cost benefit analysis. In this light, environmental advocates must steer away from the growing trend to articulate their goals in anthropocentric-based terms. As Tribe warned, “by articulating environmental goals wholly in terms of human needs and preferences—[the environmentalist] may be helping to legitimate a system of discourse which so structures human thought and feeling as to erode, over the long run, the very sense of obligation which provided the initial impetus for his own protective efforts.”¹⁶⁸

Overall, Tribe’s “vision of process” for developing and mediating teleological convictions concerning humans and the earth embodies this appeal for an ongoing normative engagement:

Its insistence on the continuing reformulation and evolution of principles distilled from it at each stage provides a way of not only bridging the gap between successive stages but also energizing the journey through a commitment to overcome the inevitable inadequacies at each stage. Thus consciousness remains in a double stance: While vigorously living out the values provided by the present stage, we remain aware of the fact that these values themselves pass through evolutionary stages whose unfolding we participate and sanctify.¹⁶⁹

That many of our environmental statutes are not only motivated by anthropocentric interests but have regressed from their declared quality-based purpose to result-oriented technology and economic feasibility standards reveals that we have reneged in our commitment to overcome the past and present inadequacies of environmental jurisprudence.

B. Epistemological Arrogance

The appeal that environmentalists continue their quest in both critiquing contemporary teleological perspectives and offering alternative ways of thinking about how to consider nonhuman components of the environment presumptively brings forth the challenge that such normative values and goals be defined “objectively.”¹⁷⁰ Industry has had the advantage in providing “objective” economic and technological

168. Tribe, *supra* note 11, at 1330-31.

169. *Id.* at 1346.

170. See Bryan Norton, *Epistemology and Environmental Values*, in LAND, VALUE, COMMUNITY: CALLICOTT AND ENVIRONMENTAL PHILOSOPHY, *supra* note 147, at 124 (describing the predicament environmentalists face in having to claim their values and goals are objective for them to be worthy and effective in influencing policy change).

calculations and articulations to persuade legislators to embrace a level of expectation that meets their interests.¹⁷¹ The presumption that objectivity is a prerequisite to valid theories of law, however, reflects Alexander's epistemological fallacy of contemporary jurisprudence.

The question of epistemology involves "how we know what we claim to know."¹⁷² Alexander maintains that contemporary theories of law have an "epistemology which insists upon definite concrete substance to our knowledge," explaining that "[t]he elevation of rationalism to a position of ultimate authority has created an intolerance for ambiguity and subjective beliefs."¹⁷³ In short, the emergence of moral relativism in Western thought, in which it is believed that there are no objective truths and that morals are relative and subjective, has led contemporary legal theories to reject natural law and other normative concepts.

Alexander offers the possibility, however, that it is really the limits of human rationality, and not the limits of morality, that prevent us from perceiving ultimate, substantive truths.¹⁷⁴ Alexander contends that by adopting an epistemology aware of human limitation, contemporary jurisprudence would not develop narrow and short-sighted answers to dilemmas that are inherently not objective, not quantifiable, and not concrete.¹⁷⁵ Instead, a humbled epistemology demands a jurisprudence that seeks the assistance of disciplines other than economics and science such as theology and moral philosophy.¹⁷⁶ Fundamentally, "it would compel a more cautious and conscientious response to what is technologically possible," and would rely less on quick, short-sighted

171. Lon Fuller articulated this notion when reflecting on how to discern the proper scope of property rights:

[T]he rigidities of property and contract must be held within their proper boundaries. If they reach beyond those boundaries, society's effort to direct its resources toward their most effective uses is frustrated by a system of vested personal and institutional interests, a "reserved market," for example, being a kind of property right reaching beyond its proper domain. Here we encounter again what is essentially the problem of locating the imaginary pointer at the right place. Once again, the economist enjoys an advantage over the moralist. If he too has difficulty in drawing the line, he can at least shield his fumbblings behind an impressive vocabulary

FULLER, *supra* note 159, at 28. Fuller's insights here anticipate his views on the nature of human associations—wherein legal principles eventually begin to dominate and lead a community to lose sight of its shared aspiration. See discussion *supra* Part II.C.

172. Alexander, *supra* note 9, at 33.

173. *Id.*

174. *Id.* at 34 (explaining that "[a]n epistemology which is aware of its self-righteousness allows for the possibility that differences in norms, morals or the foundations of law may well be a reflection on the nature of human beings rather than an indication of the nature of moral reality").

175. *Id.* at 35.

176. *Id.* at 34-35.

answers in the interest of obtaining more comprehensive, though possibly indefinite, predictions.¹⁷⁷

1. Epistemological Fallacy of Contemporary Environmental Jurisprudence

In the context of environmental law, epistemology involves judgments regarding the question posed by Glacken: “In his long tenure of the earth, in what manner has man changed [the earth] from its hypothetical pristine condition?”¹⁷⁸ Contemporary responses to this question primarily come from the disciplines of science and economics, which typify the belief that humans are capable of making quantifiable measurements and accurate conclusions. From these scientific and economic conclusions, objective legal judgments are rendered regarding whether the change is for the worse, such that it constitutes an environmental injury.

As revealed by the frameworks of NEPA and the ESA, it is generally believed that scientific and other methodical data can offer a full picture of the value of the environment, and therefore, such information is considered an adequate source for making environmental injury determinations. These statutes also presume that agencies are competent to assess this data and make rational determinations as to the extent to which the value of the environment is diminished by prospective human actions. Moreover, trends in environmental injury determinations made pursuant to NEPA and the ESA illustrate that agencies—and the information they assess—presuppose that the environment is quite resilient, and can withstand adverse impacts, and that humans are fully capable of remedying significant impacts through technological innovations. Any error or degree of uncertainty is placed on the side of optimism in the strength of the environment rather than on the side of caution.

This absolute faith in science and other quantifiable data as the ultimate source of human knowledge about the environment, coupled with an overall confidence in human capacity to assess and repair human impacts on the environment, reflects an epistemological arrogance. The root of this fallacy is again the anthropocentric perspective, which at once compels humans to believe that we have the reasoning capacity to successfully manipulate and control nature to meet our ends, and which limits our concept of environmental injury to that which affects human

177. *Id.*

178. GLACKEN, *supra* note 5, at vii.

interests. Normative critiques and alternative ways of valuing nature shed light on the consequences of this self-righteous epistemology and offer possibilities for a more prudent way of thinking about environmental injuries.

2. Background and Critique of Epistemological Arrogance Embedded in Contemporary Environmental Jurisprudence

In *Man's Responsibility for Nature*, John Passmore explains that early strains of Western thought did not reflect the contemporary view that humans are capable of manipulating nature to meet their ends.¹⁷⁹ Rather, it was believed that humans had limited capacities due to “the fall” and the Augustinian notion of original sin: “[W]hat men had to transform was not nature, but themselves, and even that was possible only with the aid of God’s grace.”¹⁸⁰ The driving voice of the scientific revolution surmounted this human sense of humility. In the late seventeenth century, Francis Bacon avowed that science could restore what sin destroyed, stating: “Let the human race recover that right over Nature which belongs to it by divine bequest.”¹⁸¹ Bacon insisted that science and technology could be used to learn “[the] causes, and secret motions of things . . . enlarging of the bounds of human empire, to the effecting of all things possible.”¹⁸²

This Baconian-laden confidence has persisted to this day, as reflected by contemporary environmental jurisprudence.¹⁸³ Present scientific realities, however, reveal that humans are not capable of fully predicting or understanding, let alone perfecting, the earth’s natural

179. PASSMORE, *supra* note 141, at 19.

180. *Id.*; see also ST. AUGUSTINE, ON GRACE OF CHRIST AND ON ORIGINAL SIN (n.p. 418 A.D.) (“When God says, “Turn ye unto me, and I will turn unto you” (Zech 1:3), one of these clauses—that which invites our return to God—evidently belongs to our will; while the other which promises His return to us, belongs to His Grace.”). Even earlier than St. Augustine, Passmore reveals that the strains of Christianity that reflected “man as Despot” over nature, particularly Origin in the third century A.D., were influenced by Stoicism more so than the New or Old Testament. PASSMORE, *supra* note 141, at 3-27. Moreover, he remarks that the grant of dominion over nature in Genesis may give humans the right to use nature, but it does not necessarily infer that nature exists solely for humans and that humans have a right to transform it to serve their ends. *Id.* at 17.

181. PASSMORE, *supra* note 141, at 19 (quoting THE WORKS OF FRANCIS BACON 115 (Bacon et al. eds., 1996)).

182. *Id.* (quoting 3 THE WORKS OF FRANCIS BACON, *supra* note 181, at 156). This Baconian creed is what Tribe attributes as the driving force for the contemporary perception that humans have ultimate authority and are the ultimate purpose. See Tribe, *supra* note 11, at 1324.

183. See Tribe, *supra* note 11, at 1324.

systems and processes.¹⁸⁴ The classic ecological paradigm is that the earth is striving toward an equilibrium ideal. Over the last two decades, however, scientists have increasingly discovered that ecosystems are dependent on natural change and disruption, interconnected and influenced by events occurring in distant ecosystems and fairly slow to recover from disturbance.¹⁸⁵ In his book *Discordant Harmonies*, Daniel Botkin “deconstructed” the notion that nature can reach a state of balance, explaining that the equilibrium paradigm reflects an infirm attempt to relate science to theological or philosophical visions of an ideal universe.¹⁸⁶ The reality is that “nature moves and changes and involves risks and uncertainties and . . . our own judgments of our actions must be made against this moving target.”¹⁸⁷ The focus of the contemporary paradigm is on this historical contingency and process of change rather than on an endpoint.¹⁸⁸

In an article uncovering the legal consequences of this ecological paradigm shift, Judy Meyers recognizes the danger of misinterpreting the new paradigm in a way that justifies anthropogenic or human-caused change as natural.¹⁸⁹ The common protest against efforts to limit human impacts on the environment is that humans are a part of nature and thus their actions are themselves natural. Indeed, human action *can* be natural. It has a tendency, however, to reach a realm beyond. Some environmental philosophers contend that humans can transcend the natural order when they take advantage of human reasoning capacity by ignoring and disrespecting nature’s intrinsic value in an attempt to control

184. Rachel Carson roots the fallacy of the classical ecological paradigm in the outdated anthropocentric perspective: “The ‘control of nature’ is a phrase conceived in arrogance, born of the Neanderthal age of biology and philosophy, when it was supposed that nature exists for the convenience of man.” RACHEL CARSON, *THE SILENT SPRING* 261 (1962). Moreover, the notion that humans can perfect nature has been refuted by contemporary Christian traditions. For example, the Catholic Papal Commission has condemned the principle that it is humanity’s duty to “promote earthly culture by humanizing nature” as an “exceedingly humanistic altruism” that allows “insufficient place in human life for the action of the Holy Spirit and for his mission of healing sin.” PASSMORE, *supra* note 141, at 33 (quoting POPE AND PILL 290 (Leo Pyle ed., 1968)). The Commission explains that the sinful human spirit lacks both the duty and capability to remake nature, as only “the Holy Spirit” can perfect nature. *Id.*

185. See generally Judy Meyer, *The Dance of Nature: New Concepts in Ecology*, 69 CHI. KENT L. REV. 875 (1994).

186. DANIEL BOTKIN, *DISCORDANT HARMONIES: A NEW ECOLOGY FOR THE TWENTY-FIRST CENTURY* (1990).

187. *Id.*, quoted in Tarlock, *supra* note 99, at 259.

188. This parallels Tribe’s purposive “vision of process” for contemporary environmental law. See discussion *supra* Part III.A.

189. Meyer, *supra* note 185, at 875.

nature to serve human ends.¹⁹⁰ In this light, Meyers avows: “the new paradigm is not a license for environmental abuse,” explaining that the rate and quality of anthropogenic change differs significantly from natural change.¹⁹¹ Accordingly, “[a]nthropogenic change is acceptable only if that change is within limits. The limits to change at a site are set by physiological capabilities of organisms present, evolutionary limits, . . . and historical limits We can use natural rates of change to help set acceptable limits for anthropogenic change.”¹⁹²

This perspective follows environmental philosopher Baird Callicott’s proposition that it is the ecological, and not the geological temporal scale that is morally meaningful: “Human disturbances should not exceed the spatial and temporal scales of natural disturbances. Moreover, our moral obligations—engendered by our community memberships, human and biotic—are delimited by a fairly circumscribed temporal scale.”¹⁹³ Callicott explains that we cannot reprimand ourselves for the last great extinction, sixty-five million years ago.¹⁹⁴ And yet, the anticipation that biodiversity will bounce back from this anthropogenic mass extinction now in progress, as it did before, should not “let us off the ethical hook.”¹⁹⁵ In sum, “[w]e should not fret over the deep past, nor should we exonerate ourselves by contemplating the deep future. Our duty is to preserve the species populations of the biotic communities that exist now We must build into [our notion of the specious present] room for change; the world is not static.”¹⁹⁶ Callicott suggests that the

190. Some environmental philosophers have insisted that all consequences of human action are natural, as humans are a part of nature. See, e.g., Frederick Turner, *The Invented Landscape*, in BEYOND PRESERVATION 44 (Dwight Baldwin et al. eds., 1994). Others assert that when human action reflects a “technological acceleration of natural forces” to serve human ends the results are not natural. See, e.g., Eric Katz, *The Big Lie: Human Restoration of Nature*, in ENVIRONMENTAL ETHICS: AN ANTHOLOGY, *supra* note 131, at 391. This Article endorses a third view, that there are degrees of naturalness, where nature left undisturbed by humans is most natural and nature technologically transformed to serve human needs is the least. See, e.g., ELLIOTT, *supra* note 134, at 79. The question of whether humans are “a part” of nature is inherent in the ontological inquiry. See discussion *supra* Part II.C.

191. Meyer, *supra* note 185, at 882.

192. *Id.* at 882-83. Meyer continues to suggest: “One important role for ecological science is to determine natural rates of change—to understand intrinsic variation in ecological phenomena over long periods of time.” *Id.* This view differs from that of Botkin and other commenters that maintain the limits of human understanding in that regard. See, e.g., JAMES GUSTAFSON, THE SENSE OF THE DIVINE: THE NATURAL ENVIRONMENT FROM A THEOCENTRIC PERSPECTIVE 148 (1994).

193. J. Baird Callicott, *My Reply*, in LAND VALUE, COMMUNITY: CALLICOTT AND ENVIRONMENTAL PHILOSOPHY, *supra* note 147, at 297; see also discussion *supra* Part II.C.

194. Callicott, *supra* note 193, at 297.

195. *Id.*

196. *Id.*

ecological scale, “calibrated by such ecological processes as disturbance regimes and succession” is the appropriate scale on which to morally evaluate change.¹⁹⁷

In sum, we can only know so much about the implications of our impacts to the environment—but we must hold ourselves accountable for what we do and can know about the limits of ecological processes. Governmental agency determinations regarding environmental injuries, such as those pursuant to NEPA and the ESA, ignore the realities of what humans currently know about what actually harms nonhuman components of the environment, and yet they deny what humans fail to know about how to effectively restore the ecosystems they have injured.

On the one hand, the new ecological paradigm teaches us that the interdependent nature of the environment makes environmental entities more susceptible to minor and even distant impacts, and slower to recover from such impacts. Yet agencies tend to define projects narrowly subject to NEPA and the ESA on a site-specific basis, and fail to adequately address the long-term and cumulative impacts. On the other hand, the intricacies and complexities of ecological processes make it impossible for humans to fully understand how to effectively mitigate or restore injuries to the environment. Nonetheless, agencies tend to raise NEPA’s threshold of “significant” and the ESA’s thresholds of “jeopardy” and “take” based on their faith in mitigation and restoration possibilities—thereby denying the limits of human knowledge.¹⁹⁸

Indeed, we cannot fully mitigate or restore the values of nature, as we will never fully understand them. By admitting the limits of human capacity and rationality, environmental agencies and policymakers could steer clear of developing short-sighted legal answers to environmental dilemmas.

197. *Id.*

198. Karkkainen, *supra* note 65, at 910. Karkkainen’s recent article on NEPA recognizes the Act’s failures over the last thirty years, noting that it has merely become an expensive and timely instrument for gathering information without much assessment. *Id.* His pragmatic proposal to endorse mitigation EAs in lieu of EISs, however, ignores the reality that we cannot know how to mitigate a potential environmental injury unless we are more informed of likely direct, indirect, and cumulative impacts which full EISs are meant to uncover. *Id.* The problem is not in gathering less information, but in actually assessing all available information and then making precautionary decisions. Erring on the side of preparing full EISs would guide agencies in gaining better knowledge and understanding rather than presuming they already know enough to make a “rational” choice.

3. Alternative Ways of Thinking About Environmental Values

At least one practical underlying question arises: can agency determinations about environmental injuries objectively measure normative concepts of the value of environmental entities, and if so, how? The human capacity to reason is at once what enables us to recognize that nonhuman components of the environment may have values of their own, and what precludes us from escaping our anthropocentric tendencies. A point of contention among those that have debated the issue of nature's intrinsic value is the difference between nonhuman components of the environment having value "for themselves" and "in themselves."¹⁹⁹ Those that acknowledge this distinction contend that to be valuable "for themselves" is to have "goods of their own," whereas to be valuable "in themselves" is derived from the distinct human capacity to reason—specifically to make judgments regarding the extent to which humans, as well as other nonhuman species, may have "goods of their own."²⁰⁰ It is this reasoning capacity that allows humans to contemplate the moral or other justifications for humans to injure the environment, and to advance and employ technology as a means to use nature to further their own well-being.²⁰¹ In essence, the unique capacity to reason renders humans the judge of nature's value, and moreover assigns humans as agents accountable for preventing actions that will irretrievably diminish that perceived value.

First, the judicial role of humans leads to the question of whether human determinations regarding the intrinsic value of nature can be objective, or are inherently subjective, and whether subjectivity equates to anthropocentrism. Callicott contends that although nonhuman species can have value for their own sake, human consciousness is the source of that value, and consequently it is a subjective process.²⁰² Conversely, Holmes Rolston III maintains that nature is the source of its own intrinsic value and humans can objectively perceive that value, explaining that "nature is the holder, humans are the beholder" of values.²⁰³ Eugene

199. See Lee, *supra* note 132, at 155.

200. *Id.*

201. *Id.* at 157.

202. See Eugene Hargrove, *Weak Anthropocentric Intrinsic Value*, in ENVIRONMENTAL ETHICS: AN ANTHOLOGY, *supra* note 131, at 181 (citing J. BAIRD CALLICOTT, IN DEFENSE OF THE LAND ETHIC 173 (1989)).

203. Holmes Rolston III, *Value in Nature and the Nature of Value*, in ENVIRONMENTAL ETHICS: AN ANTHOLOGY, *supra* note 131, at 175; Hargrove, *supra* note 202, at 181. In a more recent essay, Callicott maintains that "Rolston and I differ less on the question of intrinsic value in nature than he supposes." Callicott, *supra* note 193, at 304. Callicott draws a distinction between "epistemological" and "ontological" objectivity, referencing Kant, and points out that the former

Hargrove critiques both views, admitting that it is impossible for humans to at least avoid being anthropogenic, because whatever and whenever we value it is from a human perspective.²⁰⁴ Hargrove insists, however, that this does not require an anthropocentric perspective.²⁰⁵ Unlike Callicott, Hargrove recognizes that the thing valued does not necessarily derive its value from the subjective judgments of a human evaluator.²⁰⁶ Yet, distinct from Rolston, Hargrove acknowledges the influence of the human as judge.²⁰⁷ Hargrove suggests that humans can respect a nonhuman component of the environment by acknowledging that it has a value for itself.²⁰⁸ Hence, if we attempt to consider how a tree or river might feel, we do so anthropogenically—“the way a human imagines that a nonhuman might look at the world.”²⁰⁹

Whether Hargrove’s view is labeled anthropocentrism, weak anthropocentrism (what Hargrove labels it), or nonanthropocentrism, it keenly acknowledges that value judgments—whether for personal or policy purposes—are made by humans and are in this sense at least influenced by a human perspective.²¹⁰ Nevertheless, it embraces the notion that nonhuman components of the environment have intrinsic value and proposes that human judgments ought to respect the natural environment in this light.²¹¹ Moreover, although human perceptions may

is not a necessary condition for the latter. *Id.* In other words, Callicott’s discussion of intrinsic value addresses the epistemological question, maintaining that to value something else is an “intentional act of a valuing subject” and is thus a subjective exercise. *Id.* Whereas Rolston’s discussion of intrinsic value focuses on the ontological question, defending the notion that nonhuman components of the environment value themselves intrinsically—as they exist independent of the valuing subject. *Id.*

204. Webster’s defines anthropogenic as “of, relating to, or resulting from the influence of human beings on nature,” whereas anthropocentric is “considering human beings as the most significant entity of the universe.” MERRIAM-WEBSTER’S COLLEGIATE DICTIONARY (2003); see also Hargrove, *supra* note 202, at 183-86.

205. Hargrove, *supra* note 202, at 186.

206. *Id.* at 183-86.

207. *Id.*

208. *Id.*

209. *Id.* at 186.

210. This statement addresses the epistemological question of intrinsic value, and is thus in line with Callicott’s reiteration of his view on intrinsic value. See Callicott, *supra* note 193, at 302.

211. This statement addresses the ontological question of intrinsic value, and again, appears to be in line with Callicott’s view. *Id.* at 307. The point of departure between Callicott and Hargrove then, may simply be their approach. Callicott notes that Hargrove is a pragmatist, as he believes that “an emphasis on the revisionary at the expense of the descriptive will . . . simply make environmental ethics completely esoteric and unusable.” *Id.* Whereas Callicott is a visionary, as he believes that “people, especially now in our fast-paced culture, are oriented more to the future than to the past and are receptive to—indeed have a strong appetite for—new, inspiring ideas.” *Id.* Callicott maintains that Hargrove’s assertion that the general public has rejected the notion of nonanthropocentric value is wrong, and points to the Earth Charter, adopted

not be “objective,” humans can at least attempt to consider how a particular environmental entity experiences the world—or reacts to pleasure or pain. This leads to the possibility of placing the value of trees, rivers, or nonhuman species, in certain times and circumstances, at odds with human interests in short-term economic and technological success. Fundamentally, accepting human limitations in perceiving the value of nonhuman environmental components requires that environmental agencies and policymakers exercise caution when assessing environmental injuries. Furthermore, acknowledging the epistemological limitations of humans requires that we do not turn to mitigation and restoration efforts—or other forms of compensation—as a justification to harm an environmental component.

Hence, humankind’s capacity to reason renders humans accountable for environmental injuries we bring about, and yet, the limitation of human reasoning capacity invokes a sense of precaution. The “precautionary principle,” which has increasingly been promoted in international environmental policies, is a keen epistemological signpost for contemporary ecological awareness.²¹² The origin of this principle is believed to lie in *The Imperative of Responsibility*, a thesis of Hans Jonas.²¹³ Jonas recognizes that technology and science enable humans to produce environmental effects that cannot be predicted or perceived with certainty.²¹⁴ As responsible agents for our own capacity, humans must be held accountable for potential environmental injuries in the distant future. The precautionary principle accordingly holds that cautious measures should be taken when certain human activities or technologies raise threats to human health or the environment—namely, before the consequences may be fully or scientifically understood.²¹⁵ Efforts to protect human health and the environment would thus take precedent

by the United Nations in 2000, which embraces the concept of intrinsic value: “1. Respect Earth and all life in its diversity. A. Recognize that all beings are interdependent and *every form of life has value regardless of its worth to human beings*.” EARTH CHARTER LAUNCH, EARTH CHARTER BRIEFING BOOK (The Hague ed. 2000) (emphasis added). In sum, Callicott—much like Tribe, Fuller, and this Article—above all encourages normative discourse which can lead to the “intellectual, ethical, and spiritual potential of humanity to embrace a . . . grand new idea.” Callicott, *supra* note 193, at 307.

212. See Stockholm Declaration of the United Nations Conference on the Human Environment, June 16, 1972, at 21, U.N. Doc. A/CONF.48/14/Rev.1 (1973) (embodying a general duty for states to ensure that the activities of their citizens do not harm the environment); Rio Declaration on Environment and Development, June 13, 1992, princ. 15, U.N. Doc. A/CONF.151/26 (vol. I) (1992).

213. Ewald, *supra* note 12, at 70-77 (discussing Jonas, *supra* note 12).

214. *Id.*

215. See David Appell, *The New Uncertainty Principle*, SCI. AM., Jan. 2001, at 18-19 (stating there is no consensus on the definition of the precautionary principle).

over calls for rapid industrial or technological development.²¹⁶ This precautionary principle necessitates a shift from the compensation mentality of past or present damages to a prophylactic decision-making framework that identifies and prevents irreversible damage.²¹⁷

In sum, an epistemology that embodies both a weak, or nonanthropocentric perspective and the precautionary principle ought to deeply enlighten dialogue and debates on legal determinations regarding environmental injuries. Recognizing the intrinsic value of the environment and acknowledging epistemological limitations of humans compels a more cautious approach to what is technologically possible for mitigating and restoring our impacts to the environment. In turn, quick and shortsighted answers would be considered arbitrary, as the intention would be to obtain more comprehensive, though possibly ambiguous, predictions. This perspective insists that environmental policymakers be open to the possibility that the disciplines of science and economics may not be the best—and ought not be the exclusive or even primary—source of information for making environmental injury determinations. The disciplines of philosophy, theology, and liberal arts—including poetry, narratives, painting, and photography—which intuitively portray human experiences in and with the natural environment, can be just as much or more of an informative means for uncovering how humans can know and value the environment.²¹⁸ Such “aesthetic presentations” can and ought to enhance legal determinations about what human impacts change the environment for the worse.²¹⁹

C. *Ontological Error*

Our way of thinking about and understanding the natural environment directly shapes our way of being on earth—which leads to Alexander’s third fallacy. The question of ontology deals with the nature

216. *Id.*

217. Ewald, *supra* note 12, at 77. Others have associated the origins of the principle to the principle of *sic utere tuo ut alienum non laedas* (one must not use his own to injure another). See, e.g., Phillippe Sands, *The Greening of International Law: Emerging Principles and Rules*, 1 *IND. J. GLOBAL LEGAL STUD.* 293, 299-302 (1994). However, this notion is based on a Kantian principle or the golden rule, and although commendable, it reflects an individualistic or anthropocentric perspective.

218. See Carol Rose, *Environmental Lessons*, 27 *LOY. L.A. L. REV.* 1023, 1042 (1994) (recognizing “[i]t is quite astonishing to see how strongly environmentalism has been influenced by aesthetic presentations—even though the literature of environmental policy pays relatively little attention”).

219. *Id.* (“With aesthetics and rhetoric in mind, we might reconsider the [Information Problem of environmental jurisprudence], and think afresh whether a moral cloud need necessarily shadow some of the approaches that otherwise seem so promising.”).

of being.²²⁰ Alexander explains that the ontological premise of contemporary jurisprudence is that the individual is radically autonomous from the community.²²¹ This individualism reflects the ontological fallacy as “[w]hat is missing from contemporary jurisprudence is the possibility that the nature of being is relational rather than individual.”²²² The fact that individuals perceive themselves as the only source of authority over morals mirrors what Alexander labels “an ontology of self-righteous individualism.”²²³ He proposes that we instead move toward an “ontology of complicity,” or “the sense in which the understanding of one’s self is necessarily and essentially a part of one’s understanding of community.”²²⁴

1. The Ontological Fallacy of Contemporary Environmental Jurisprudence

In the context of environmental jurisprudence, the ontological inquiry parallels Glacken’s question: “Have [the earth’s] climates, its relief, the configuration of continents influenced the moral and social nature of individuals, and have they had an influence in molding the character and nature of human culture?”²²⁵ This inquiry is twofold: first, it concerns the human species’ way of being on earth; and second, it involves a human individual’s way of being within the human community when addressing human impacts to the environment. Correspondingly, the ontological fallacy of contemporary jurisprudence is twofold: first, it perceives humans as radically autonomous from the natural environment by setting humans apart from nature; and second, it perceives individuals as radically autonomous from the human community by prioritizing individual liberty and entitlements above public interests when assessing environmental injuries.

2. Relation Between Humans and the Natural Environment

Although Alexander does not explicitly expand his ontological analysis beyond the human community, his insights are congruent with theories of environmental ethics that emphasize the interdependent relationship between humans and the natural environment. Walter Obrient explains that there are two views of humans and nature: “man

220. Alexander, *supra* note 9, at 26.

221. *Id.*

222. *Id.*

223. *Id.* at 27.

224. *Id.* at 26.

225. GLACKEN, *supra* note 5, at vii.

apart from nature” and “man a part of nature.”²²⁶ Obrient maintains that the first view leads to a dualistic perspective that man is above nature.²²⁷ It is based on the major premise underlying the anthropocentric perspective—namely, that humans, as the source of their own authority, have power over nature to meet their ends. Conversely, the view that “man is a part of nature” acknowledges that humans are interdependently related to the natural environment. This is the major premise of most ecocentric theories.²²⁸

By limiting our sense of moral and legal obligations to humans presently living, our positive environmental laws reflect an ontology of self-righteous individualism. Although humans, unlike any other species, have the rational capacity to manipulate nature through science and technology to serve our interests, it does not follow that doing so is always moral.²²⁹ Such a mentality reflects anthropocentric egoism: it ignores the proper place of humans in the natural order, and overlooks

226. Walter H. Obrient, *Man, Nature, and the History of Philosophy*, in PHILOSOPHY AND ENVIRONMENTAL CRISIS 79 (W. Blackstone ed., 1974).

227. *Id.*

228. Not all ecocentric theorists agree. In his article *Naturalizing Callicott*, Rolston criticizes Callicott’s view that humans and human culture are a part of nature, not apart from nature, maintaining that while nature has evolved human culture, the force of our own culture has pushed the human species out of nature’s realm. See Callicott, *supra* note 193, at 300. Rolston’s argument is much like that of Elliott’s notion of degrees of nature. See discussion *supra* notes 134, 190. Callicott rebuts this claim on evolutionary grounds, explaining:

Our physical lives, certainly, and the largest part of our conscious lives—our feelings of joy and sorrow, anger and remorse, jealousy and rage; our intense social interactions, negotiated mostly by body language, facial expression, and tone of voice; our pervasive sexuality—all, although culturally shaped around the edges, are utterly animal and therefore natural.

Callicott, *supra* note 193, at 301. Instead of setting human culture or certain action apart from nature, Callicott warns of the threat it faces from nature’s force:

The dazzling artifacts of culture—skyscrapers, airplanes, bulldozers, and such—powerful although they may be to transform and destroy nature, seem fragile and ephemeral in comparison with the titanic and persistent forces and processes of nature. We are earthy beings, and remain—culturally, as in every other way—earth bound.

Id. Indeed, the underlying belief here is that there are natural limits to the evolution of human culture, it is just a matter of whether we at least attempt to make a conscious and committed effort to keep our own reign in check, before nature steps in. *Id.*

229. Conversely, Kant deduced from his belief that only humans possess reasoning capacity the notion that humans are “the lord of nature” and from his belief that nature is to serve human ends the notion that our relationships to nature are not subject to morality. PASSMORE, *supra* note 141, at 15. However, as Passmore points out, Kant’s view has largely been rejected. *Id.*; see also H.R. NIEBUHR, *THE MEANING OF REVELATION* 167 (1941) (“Nor can the will of God be interpreted so that it applies within a world of rational being and not in the world of the irrational, so that men must be treated as ends because they are reasonable but nonhuman life may be violated in their service of human ends. Sparrows and sheep and lilies belong within the network of moral relations when God reveals himself; now every killing is a sacrifice.”).

the complexities and intricacies of the whole in which humans are an infantile, fallible, and interdependent part.

Shifting our moral convictions away from a human-centered perspective toward a sense of complicity insists that our morals and legal principles acknowledge that humans are just one part of a greater community of life. Leopold's land ethic, which is based on the ecological and evolutionary considerations of Darwin, maintains that we are "plain members and citizens of the biotic community."²³⁰ Building on this belief, Callicott's notion of holism avers that "[a]ll contemporary forms of life thus are represented to be kin, relative, members of one extended family. And all are equally members in good standing of one society or community, the biotic community or global ecosystem."²³¹ Callicott explains that his theory "provides moral standing for both environmental individuals and for the environment as a whole."²³² First and foremost, however, Callicott suggests that determinations about the environment ought to adhere to the underlying principle of doing what will "enhance the diversity, integrity, beauty, and stability of the biotic community."²³³

In this light, the ecocentric or holistic perspectives of Leopold and Callicott provide that global ecosystems and other wholes, such as entire species and biotic communities, are ontologically the principal bearers of intrinsic value.²³⁴ The interests of the human species or an individual human and likewise the interests of a particular nonhuman species, are, thereby relatively less valuable than the global ecosystem in its entirety. Although a sense of human distinctiveness remains, this individualism is tied to an understanding of our dependency on—and complicity with—components of the nonhuman environment.

Callicott further suggests that with a sense of responsibility, individuals and wholes beyond the human community can be "objects of certain, special, naturally selected moral sentiments."²³⁵ He explains that Darwinian natural selection has conferred humans with intense and wide-ranging feelings and understandings of sympathy, including

230. See Callicott, *supra* note 193, at 300.

231. See Donner, *supra* note 147, at 100-01 (quoting J. Baird Callicott, *The Search for an Environmental Ethic*, in *MATTERS OF LIFE AND DEATH: NEW INTRODUCTORY ESSAYS IN MORAL PHILOSOPHY* 364-66 (Tom Regan ed., 3d ed. 1993)).

232. Donner, *supra* note 147, at 99 (quoting Callicott, *supra* note 193, at 350).

233. Callicott, *supra* note 193, at 364.

234. See Aldo Leopold, *The Land Ethic*, in *ENVIRONMENTAL ETHICS: AN ANTHOLOGY*, *supra* note 131, at 38-52; Donner, *supra* note 147, at 100-01 (citing Callicott, *supra* note 193, at 364-66).

235. Donner, *supra* note 147, at 100-01.

benevolence and foresight, which elicit a sense of respect and responsibility for the natural environment.²³⁶

Although humans have a limited capacity to fully understand, and thus an inability to adequately restore, the complexity and intricacies of natural processes, our capacity to reason brings with it a sense of accountability for what we can know.²³⁷ Having witnessed irreparable environmental degradation, including countless extinctions, resulting largely from our own actions, humans have become enlightened on the evolutionary and historical limits of nature, as well as its physiological capabilities. Accordingly, we have broadened the scope of actions that we can reasonably foresee as having an adverse impact on natural species and ecosystems. Moreover, our capacities to intervene make us accountable for the consequences of our chosen intervening actions or inactions.²³⁸ It follows that the more we know through the use technology and science, the more accountable we become for the outcomes we bring about.²³⁹

With this sense of complicity and accountability, the human community ought to embrace a commitment to moral and legal principles that preserve the diversity and integrity of the earth as a whole. Such a commitment, however, necessitates a willingness to retract our current unconditional commitment to liberty and property interests of individual humans.

3. Relation Between Individuals and the Community When Addressing Human Impacts to the Environment

Human communities throughout history have manifested an interest and effort in protecting the natural environment in which they subsist.

236. *Id.*

237. *See* GUSTAFSON, *supra* note 192, at 149 (“As intentional participants we have responsibility, and the destiny of the natural environment and our parts in it is heavily in our hands, but the ultimate destiny of all that exists is beyond our human control.”). Gustafson does not endorse the belief in original sin that leads to a sense of guilt for all that is wrong with this world. ¹ GUSTAFSON, *supra* note 141, at 310-17. Instead, he believes that sin is a universal human fault involving the constriction of the self and community, or selfishness. *Id.* It follows, sin can be corrected by an ontological expansion of the self to the other and the community to the whole, including all life and future generations. *Id.* at 315.

238. *See* GUSTAFSON, *supra* note 192, at 67 (“Our capacities to intervene or to forbear are the grounds of our accountability; our affections and desires as well as our reasons for particular actions are subject to some moral evaluation.”); *see also* 1 R. NIEBUHR, *THE NATURE AND DESTINY OF MAN* 255 (1941) (“The fact of responsibility is attested by the feeling of remorse or repentance which follows the sinful action.”).

239. This contention relates directly back to the epistemological fallacy—as our way of knowing and understanding the environment shapes our way of being toward it.

The principle of individual private property is itself grounded in community interests. Aristotelian and Thomist justifications of private property lie in the notion that individuals take better care of what they own and will be less hostile and work more as a cohesive community if property rights are clearly defined.²⁴⁰ The principles of individual freedom and liberty have secondarily evolved from this notion that property ownership is in the best interest of the community.²⁴¹

Garrett Hardin's *The Tragedy of the Commons* provides a well-known account of the potential environmental catastrophe for property held in common.²⁴² Hardin's anecdote of shepherders adding more sheep to an open pasture depicts how individuals will hastily exploit a natural resource out of the expectation that others will do the same.²⁴³ Hardin contends, however, that private property regimes can avert the tragedy of the commons only to an extent, as some environmental resources—such as migrating air, water and species—cannot be fenced in.²⁴⁴ Moreover, Hardin maintains that “our particular concept of private property, which deters us from exhausting the positive resources of the earth, favors pollution.”²⁴⁵ Indeed, common law private property doctrines, such as nuisance and trespass, are embedded in principles of individual freedom and liberty. As such, they are largely ineffective at forcing industry to internalize the environmental costs of their activities.²⁴⁶

Hardin suggests that government intervention may be necessary to protect overused environmental resources.²⁴⁷ But, he warns that “the laws of our society follow the pattern of ancient ethics, and therefore are poorly suited to governing a complex, crowded, changeable world.”²⁴⁸ Indeed, the permit schemes of many environmental statutes are grounded

240. ARISTOTLE, *POLITICS* bk. II, ch. v (R. McKeon ed., 1941); THOMAS AQUINAS, *SUMMA THEOLOGIA*, *supra* note 143, pt. II, q. 66, art. 2.

241. See Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711, 711-12 (1986). Rose explains that as the market economy evolved through the centuries, the law of property needed to establish exclusive rights so owners could “capture the full value of their individual investments, thus encouraging everyone to put time and labor into the development of resources.” *Id.* at 711.

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

243. *Id.* at 1245.

244. *Id.*

245. *Id.*

246. See Robert V. Percival, “Greening” the Constitution—Harmonizing Environmental and Constitutional Values, 32 *ENVTL. L.* 809, 810 (2002) (arguing “that much of the tension between environmental and constitutional values can be traced to the Court’s continued reliance on a private law vision that is ill-suited to the modern regulatory state”).

247. Hardin, *supra* note 242, at 1247.

248. *Id.*

in theories of private property, which emphasize individual liberty and freedom to engage in certain polluting activities. The long term or dispersed harms felt by the greater community, or society as a whole, are left unchecked as the standing doctrine closes the courtroom door to the section of society that does not have a legally recognized property interest.²⁴⁹ In this sense, statutory injuries to the environment are perceived through a narrow and short-term ontology of self-righteous individualism.

Anticipating this dilemma, Hardin suggests that we embrace a more Hegelian notion of freedom: “freedom is recognition of necessity.”²⁵⁰ Hardin explains: “Individuals locked into the logic of the commons are free only to bring on universal ruin; once they see the necessity of mutual coercion, they become free to pursue other goals.”²⁵¹ In this light, individual freedom lies in an ontological notion of making a commitment to something outside human will, as Tribe and Alexander assert.²⁵²

As human population and technological innovation approach the bounds of natural limits, the human community faces a growing need to make an unconditional commitment to preserving and protecting the environment in which we are an interdependent part. We must be willing to turn to government intervention in some instances to facilitate these relations. In doing so, however, we must be aware that when legal principles take over, they may lead us to lose sight of our initial shared intentions.

Besides their shortcomings in addressing dispersed environmental concerns, the legal principles of entitlements and individual property rights can act as a barrier to the formation of community solidarity.²⁵³

249. See *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 573-74 (1992).

250. Hardin, *supra* note 242, at 1248.

251. *Id.* Fundamentally, Hardin identifies population growth as the underlying environmental problem, and thus concludes: “it is the role of education to reveal to all the necessity of abandoning the freedom to breed.” *Id.*

252. See Tribe, *supra* note 11, at 1338 (“To be free, it seems, is to choose what we shall value . . . to make commitments without destroying freedom is to live by principles [outside ourselves.]”); Frank Alexander, *Beyond Positivism: A Theological Perspective*, 20 GA. L. REV. 1089, 1118 (1986) (stating “freedom lies in making a commitment to that which one has chosen, with the commitment itself precluding other choices”).

253. See ROBERTO UNGER, *THE CRITICAL LEGAL STUDIES MOVEMENT* 36 (1983). Unger maintains that the presence of rights encourages individuals to separate themselves from society and discourages the participation in the “give-and-take of communal life and its characteristic concern for the actual effect of any decision upon the other person.” *Id.* He recommends the creation of legal rights—“destabilization rights” and “solidarity rights” which can facilitate communal development. *Id.*; see also Thomas F. McInerney III, *Common Ground: Reconciling Rights and Communal Concerns in Real Property Law*, 25 B.C. ENVTL. AFF. L. REV. 831, 846-51 (1998). McInerney argues that Eric Freyfogle takes this argument a step further in *Justice and the Earth*. McInerney, *supra*, at 851-54. Freyfogle critiques traditional property rights for their

Lon Fuller's views on the nature of community describe the impasse between a principle of shared commitment and a legal principle.²⁵⁴ Fuller identifies these two principles as the source of human association.²⁵⁵ The principle of shared commitment operates when an association of individuals is brought together by common aspirations or purposes, but the legal principle functions when individuals join an association primarily for furthering their own interests.²⁵⁶ Fuller maintains that these two principles delimit a temporal spectrum of all human associations.²⁵⁷ Although most represent a blend of the two, as time goes on, human associations generally become dominated by the legal principle and lose sight of the aspiration.²⁵⁸ Fuller explains:

As a matter of sociological observation we may therefore assert that as an association becomes increasingly dominated by the legal principle, the element of shared commitment—though tacitly operative—tends to sink out of sight; any attempt to secure recognition for its role is likely to stir anxieties and meet with strong resistance.²⁵⁹

Fuller views this waning principle of shared commitment with frustration and distress: “May there not be in human nature a deep hunger to form a bond of union with one's fellows which runs deeper than that of legally defined duty and counterduty?”²⁶⁰ In the context of environmental jurisprudence, our contemporary environmental statutes reveal that as a nation we have in a sense formed a human association with a shared commitment toward protecting environmental quality.²⁶¹ However, as this bond remains on the surface of legally defined entitlements, our shared commitment dissipates in the shadow of

failure to account for wider spatiotemporal externalities, such as effects on persons thousands of miles away and persons not yet living. *Id.* This lack of incentive for landowners to account for these wider interests is another example of the tragedy of the commons—which property rights directly elicit. *Id.* Freyfogle thus argues that any system of rights—whether individual or communal—should be second to an ethic of the environment, which he entitles an “ethic of care.” *Id.*

254. Lon Fuller, *Two Principles of Human Association*, in *VOLUNTARY ASSOCIATIONS* 6 (J. Roland Pennock ed., 1969).

255. *Id.*; see also Alexander, *supra* note 252, at 1120-21.

256. Fuller, *supra* note 254, at 6 (explaining that the legal principle takes over shared aspirations when “[a]n association [becomes] wholly dependent upon formal rules of duty and entitlement”).

257. *Id.*

258. *Id.* at 14 (“As the association prospers, affiliation with it will increasingly tend to carry tangible advantages, such as an interest in the common property . . .”).

259. *Id.* at 11.

260. *Id.* at 21.

261. This again reveals the interdependent relation between the teleological and ontological questions as identifying a purpose outside of oneself necessitates an expanded sense of complicity. See discussion *supra* Part II.A.

individuals primarily seeking their own gain. What has evolved is a “galloping environmental legalism” of individual liberty wrapped in property entitlement interests.²⁶²

Rather than confining our understanding of environmental injuries to legal principles of individual property rights, our concerns for and commitment toward protecting the quality of the environment ought to reshape our understanding of such legal principles.²⁶³ In this light, the works of Carol Rose offer an alternative vision of the legal notion of property, highlighting its sharing and socializing potentials over its excluding effect. First, Rose suggests that environmental ethics can yield insight to managing environmental resources, in which the environment is seen not as a “given” but a “gift.”²⁶⁴ Reflecting on the Native American creed that “the earth may be borrowed but not bought It may be used, but not owned,” Rose encourages environmental policymakers to build on “normative metaphors of property.”²⁶⁵ She explains, “The norms that lurk in property go beyond the wondrous power of exclusion They include as well, the qualities of restraint and responsibility that characterize common or shared property.”²⁶⁶ Rose refers to the normative metaphors of “shared tenancy, trusteeship, stewardship, and even gift” as alternative ways of thinking about legal concepts of property.²⁶⁷

According to Rose, as our understanding of shared resources grows, the balance between private and public interests in property must evolve.²⁶⁸ She asserts that perhaps more property should be perceived as “inherently public property”—which vests not in private or government

262. Fuller, *supra* note 254, at 78.

263. Again, this demonstrates how the ontological and teleological inquiries are interconnected, as the purpose ought to enlighten the scope of responsibility.

264. See Rose, *supra* note 13, at 1.

265. *Id.* at 25-28 (quoting MARJORIE K. RAWLINGS, CROSS CREEK 368 (1942), for the tenets of Native American environmental beliefs).

266. *Id.* Rose continues:

Property law is most visible when it deals with breakdowns of these norms of restraint and responsibility, but on the whole, property law assumes that these norms do exist and predominate in our behavior. Hence, it is no accident that environmental metaphors are often metaphors of property—shared tenancy, trusteeship, stewardship, and even gift.

Id.

267. *Id.*

268. Carol Rose, *A Dozen Propositions on Private Property, Public Rights and the New Takings Legislation*, 53 WASH. & LEE L. REV. 265 (1996); see also Carol Rose, *Rethinking Environmental Controls: Management Strategies for Common Resources*, 2 DUKE L.J. 1, 36-37 (1991) (“[A]s congestion increases, the law must too respond by regulating private property uses.”); Percival, *supra* note 246, at 870 (“Just as conceptions of the nature of environmental risk have changed over time, so too should conceptions of property rights.”); Joseph L. Sax, *Some Thoughts on the Decline of Private Property*, 58 WASH. L. REV. 481, 484 (1983).

hands, but the society at large.²⁶⁹ She explains that traditional legal concepts of public property, including theories of “public trust,” “prescriptive or dedicatory” interests, and “custom” were centrally rooted in the public’s necessity to use such property for the socializing purposes of commerce.²⁷⁰ However, “[g]iven the possibility of historical changes in activities that we think are valuable socializing institutions, we might expect that our views of ‘inherently public property’ would also change over time.”²⁷¹ It is true, as Rose notes, that courts have more recently adopted the public trust doctrine to secure the public’s recreational interests in accessing places such as beaches and lakes.²⁷² But Rose believes that there is room for expansion. Her chief lesson is:

[W]hile we may change our minds about which activities are socializing, we always accept that the public requires access to some physical locations. . . . [P]ublic access to those locations is as important as the general privatization of property in other spheres of our law. In the absence of the socializing activities that take place on “inherently public property,” the public is a shapeless mob, whose members neither trade nor converse, but only fight, in a setting where life is, in Hobbes’ all too famous phrase, solitary, poor, nasty, brutish, and short.²⁷³

In this sense, the legal concept of public property can be a vehicle for bringing communities together, organized around the common vision of protecting the environment. Access in this context is both physical and theoretical. In a physical sense, inasmuch as the “public trust” holds that public access to certain property supersedes private rights, any preexisting entitlement must always be subject to evolving notions of shared commitments to protecting environmental quality. Pollution trading schemes—such as those in the CAA and CWA—block such access by excluding parties without entitlements from the bargaining transaction. In doing so, they undercut principles of shared commitments and the notion of common or shared property.

Moreover, part of this shared commitment includes the opportunity to challenge actions that are earnestly objectionable to the common vision of protecting environmental quality. As Rose highlights, however, the “inherent public property” vests in society at large, which is indeed an “unorganized public.”²⁷⁴ Hence, a restrictive standing doctrine fails to

269. Rose, *supra* note 241, at 728-29.

270. *Id.* at 727-28. This includes roads, waterways, and market squares.

271. *Id.*

272. *Id.* at 722-23, 779-81.

273. *Id.* at 781.

274. *Id.* at 721. Rose distinguishes three possibilities: either in private hands; the government’s hands, which she refers to as the organized public; or the “public citizenry at large.”

recognize the difficulties communities face in coming together to protect common resources. Rose explains that if the number of users of a commons is “too large or heterogeneous” the option of voluntary management is “much less likely.”²⁷⁵ Accordingly, when assessing environmental standing, courts should recognize the difficulty communities face in effectively organizing around shared commitments and responsibilities for what may be dispersed commons. They should accordingly focus more on the extent of the environmental problem than question the specificity and proximity of the plaintiff’s interest. As one commenter explains:

[I]n allowing standing witnesses to describe their own interaction with and attachment to a particular resource and the harm they suffer from its degradation, the injury-in-fact standard can be used to remind skeptical audiences about why they should care [T]hey might be more compelled to want to make the effort.²⁷⁶

This leads to the more theoretical notion of access, which involves ongoing access to ideas and dialogue about how to best reconcile shared interests in protecting the environment.²⁷⁷ Because they are entrenched in legalisms of individual liberty and entitlement, environmental statutes and doctrines have stifled community relations as well as creative

Id. She prefers the latter, as it involves “claims independent of and indeed superior to the claims of any purported governmental manager” so as to prevent “temptations of politically motivated redistribution.” *Id.* at 720.

275. Ann Carlson, *Standing for the Environment*, 45 UCLA L. REV. 931, 938 (1998) (“For one reason, some of the [users] may shirk the organizing work; and for another, even if they do get organized, it is still difficult to make sure that everyone does her respective duties in conserving and restocking. Thus organizing and management efforts face the same kinds of obstacles [of] conservation or restocking efforts: On the whole, nobody wants to be a sucker and do all the organizational work, and consequently, that work may well not get done at all.” (quoting *Rethinking Environmental Controls*, *supra* note 268, at 2-5)).

276. *Id.* at 984-85 (suggesting that human centered standing rules do not transform “commons” problems into “noncommons problems”); *see also* Farber, *supra* note 110, at 516. Reflecting on Fuller’s insights and theories of adjudication, Farber suggests that “Fuller probably would not countenance the complete abolition of the standing doctrine, because of adjudication’s core function as a means of resolving real-world disputes. But his theory does not require that these disputes be defined in terms of common-law conceptions of injury and redress.” *Id.* (citing Lon Fuller, *The Forms and Limits of Adjudication*, 92 HARV. L. REV. 353, 353 (1978)).

277. *See, e.g.*, Flournoy, *supra* note 152, at 118 (“Public debate and public opinion reflect the assumption that environmental statutes represent a commitment to a new set of values—environmentalism. . . . We can no longer afford to retreat into the technical realm or maintain superficial assumptions about the values embedded in our law. . . . [T]he continued maturation of a body of law appropriate to our society’s needs and values depends on greater awareness of the values and ethics we currently embrace through our laws But awareness of the importance and nature of the inquiry we are neglecting represents the first necessary step.”).

attempts to address environmental injuries.²⁷⁸ Fundamentally, the role of the law must be to encourage and protect conditions in which customary and informal communal aspirations can prosper and evolve. As Rose points out, the lack of legal regulation is not the only problem with Hardin's notion of the tragedy of the commons, it is also the lack of customary and other informal regulations, which communities throughout history have shown can alleviate the tragedy.²⁷⁹

IV. CONCLUSION

Indeed, customs such as the Forest Service's Leave No Trace program have, for the most part, been successful at keeping our nation's wilderness "commons" in the most pristine state, enabling users to enjoy and experience the beauty of nature. Nonetheless, the mantra "leave no trace" pleads an impossible objective, and even the principle of minimizing human impact to the earth embodies an unachievable aspiration, so as to be inappropriate for any environmental statute to mandate. Each inspires, however, a reverence or respect for nonhuman beings and processes to which human welfare is interconnected and indebted. In this light, evaluating current and alternative normative perspectives can enhance human consciousness of environmental injuries, and inspire us to advance the evolving enterprise of positive environmental law toward the most prudent path.

As Alfred Whitehead envisaged, "the true rationalism must always transcend itself by recurrence to the concrete in search of inspiration. A self-satisfied rationalism is in effect a form of antirationalism. It means an arbitrary halt at a particular set of abstractions."²⁸⁰ Thus far, the fallacies of anthropocentrism, rationalism and individualism have restrained contemporary environmental jurisprudence, blocking its natural progression. The normative questions concerning the purpose of the earth's creation, the source and limits of human knowledge, and the relation between humans and the environment can enlighten our understanding of human impacts on the environment, and should inform our legal endeavors in addressing environmental injuries.

278. Rose explains that as natural resources conflicts become more frequent, societies tend to develop clear ex ante rules, including rules about regulatory takings. Rose, *supra* note 268, at 269-70. In this light, these rules commend individual liberty and entitlements above underlying shared commitments to protect the resource. Fundamentally, private property rights are limited by the broader public interest so that the notion that preexisting property rights deserve compensation from Fifth Amendment regulatory takings theories is illusory. *Id.* at 276-82.

279. Rose, *supra* note 241, at 711-12.

280. WHITEHEAD, *supra* note *, at 288.