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ENVIRONMENTAL HARMS, USE CONFLICTS, AND NEUTRAL BASELINES IN ENVIRONMENTAL LAW

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ABSTRACT

Accounts of environmental law that rely on concepts of environmental harm and environmental protection oversimplify the tremendous variety of uses of environmental resources and the often complex relationships among those uses. Such approaches are analytically unclear and, more importantly, insert hidden normativity into putatively descriptive claims. Instead of thinking about environmental law in terms of preventing environmental harm, environmental problems can be understood more specifically and more meaningfully as disputes over conflicting uses of environmental resources. This Article proposes a use-conflict framework as a means of acquiring a deeper understanding of environmental problems and lawmaking without favoring any particular normative approach. The framework does not itself propose a resolution of any environmental problems but rather describes environmental problems and environmental lawmaking conceptually in a manner that exposes normative claims and attempts to establish some common ground across diverse normative perspectives.

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INTRODUCTION

Accounts of environmental law often invoke the concept of environmental harm to explain environmental lawmaking. The goal of environmental law, for example, frequently is characterized as preventing environmental harm or protecting the environment.[1] As a

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1. *See, e.g.*, DANIEL A. FARBER, ECO-PRAGMATISM: MAKING SENSIBLE ENVIRONMENTAL DECISIONS IN AN UNCERTAIN WORLD 1 (1999) (contending that environmental laws reflect "a profound national commitment to environmental protection"); Victor B. Flatt, *Saving the Lost Sheep: Bringing Environmental Values Back into the Fold with a New EPA Decisionmaking Paradigm*, 74 WASH. L. REV. 1, 17 (1999) (proposing that the first step in the Environmental Protection Agency's (EPA) decisionmaking should be to identify "a pollutant or environmental harm to be addressed"); Noah D. Hall, *Transboundary Pollution: Harmonizing International and Domestic Law*, 40 U. MICH. J.L. REFORM 681, 746 (2007) (referring to environmental law's "goal of protecting our natural environment"); Nicholas C. Yost, *Environmental Regulation—Are There Better Ways?*, 25 ECOLOGY L.Q. 564, 571 (1999) (stating that "the purpose of environmental laws" is to "preserve and enhance the environment" (emphasis omitted)); Thomas Lundmark, Book Review, 12 J. LAND USE & ENVTL. L. 171, 176 (1996) ("The primary purpose of environmental law is the protection of natural resources from despoliation and degradation by pollution."); *About EPA*, EPA, http://www.epa.gov/aboutepa/

way of understanding environmental problems and environmental law, however, environmental harm is often illusive and inefficacious, oversimplifying many complex realities of environmental lawmaking.

Conceptualizing environmental law in terms of environmental harm is not just analytically unclear. Environmental harm's ambiguity inserts hidden normativity into putatively descriptive claims. This is because the concept of harm necessarily requires a comparison with some normatively superior baseline condition. Environmental harm, however, does not specify a baseline or justify the baseline's normative superiority over the harmed condition. Descriptions of environmental harm thereby incorporate implicit normative judgments in the form of unspecified and undefended baselines.

Ambiguous baselines, such as those embedded in environmental harm, can be employed strategically, facilitating confusing and conflicting claims. Because the premises of the claims are concealed, those who encounter competing claims have no basis for resolving the confusion or the apparent inconsistencies. In such situations, it would be tremendously valuable to have an approach that does not assume a particular normative viewpoint—that is, a way of thinking that can serve as an honest broker among competing claims and ideas.

This Article argues that a use-conflict framework for environmental law has promise as just such an honest broker. As an alternative to an environmental-harm approach, environmental problems can be understood more specifically and meaningfully in terms of *environmental uses*, the various benefits people derive from environmental resources. Such an approach avoids collapsing the tremendous variety of uses of environmental resources—which affect each other in ways that are complex and often poorly understood— into broad, simple categories, such as environmental harm and environmental protection. Environmental law is better understood as a way of managing conflicting uses of environmental resources, rather than simply as an effort to protect the environment from harm. In short, environmental law is really about the relationships among environmental uses.

In a previous article, I introduced the use-conflict framework as a solution to the perceived conceptual incoherence of environmental

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index.html (last visited Mar. 5, 2011) ("EPA's mission is *to protect human health and the environment*." (emphasis added)). Indeed, the EPA's name, which references "environmental protection," rather than just "environmental," demonstrates this tendency.

law.[2] That article contended that a legal field consists of a group of situations unified by a pattern or set of patterns that is both common within the field and distinctive from other areas of law.[3] It argued that for environmental law, the dominant pattern was the presence of environmental resources that are public, physical, and pervasively interrelated.[4] Based on this claim, I proposed a use-conflict framework that conceptualizes environmental lawmaking as the management of conflicts among uses of environmental resources.[5]

Here, my purpose in employing the use-conflict framework is different. This Article proposes the use-conflict framework as a means not merely of cohering environmental law but also of acquiring a more complete and deeper understanding of environmental problems and lawmaking. The use-conflict framework rests on three core claims: (1) that uses of environmental resources are the dominant driver of environmental disputes; (2) that environmental disputes arise when environmental uses physically conflict; and (3) that environmental lawmaking therefore is best understood as an effort to manage conflicts among uses of environmental resources. Thinking of environmental lawmaking in these terms allows an analytical accuracy, clarity, and depth that is missing from other approaches. These advantages are not just academic. How a legal problem is conceptualized and communicated—that is, how it is framed—affects people's views of how the law should govern it.[6] The use-conflict framework provides an intellectual structure for facilitating thoughtful analysis of and debate about issues of environmental law in whatever context they arise. As such, it should be useful to analysts of and participants in any debate or decision of environmental lawmaking.

The use-conflict framework differs from standard accounts of environmental law in that it is a descriptive, rather than normative,

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2. Todd S. Aagaard, *Environmental Law as a Legal Field: An Inquiry in Legal Taxonomy*, 95 CORNELL L. REV. 221, 275 (2010).

3. *Id.* at 241–45.

4. *Id.* at 264–69.

5. *Id.* at 275–76.

6. *Cf.* Jonathan Remy Nash, *Framing Effects and Regulatory Choice*, 82 NOTRE DAME L. REV. 313, 314 (2006) ("Framing effects may render [regulatory] instruments subject to criticism to which other, competing instruments are not subject, even if in economic reality . . . the competing instruments could be subjected to the same criticism."); Amos Tversky & Daniel Kahneman, *The Framing of Decisions and the Psychology of Choice*, 211 SCIENCE 453, 453 (1981) ("We have obtained systematic reversals of preference by variations in the framing of acts, contingencies, or outcomes.").

approach to environmental problems. It intentionally frames environmental problems in a manner that is consistent with a broad range of viewpoints. Its purpose is not to propose a resolution of any environmental problems—such an argument necessarily would entail a strong normative component—but rather to describe environmental problems and environmental lawmaking in a manner that exposes normativity and that attempts to establish some common ground across diverse normative perspectives. Because the use-conflict framework is descriptive and values-inclusive, it can serve as a neutral baseline that enables fair comparisons of competing normative claims—whether they are claims about a specific policy issue or competing general normative perspectives—thereby facilitating more thoughtful deliberation about the often difficult underlying issues of environmental lawmaking.

This Article proceeds in five Parts. Part I describes the distinctive characteristics of environmental problems and the drawbacks of viewing those problems in terms of environmental harm. Part II defines the use-conflict framework and shows why it explains environmental lawmaking better than an environmental-harm framework can. Part III explores the use-conflict framework's practical implications for environmental lawmaking and policy analysis. Part IV examines how a use-conflict framework highlights some of the fundamental challenges of environmental lawmaking. Part V argues that the use-conflict framework is an example of how a neutral baseline, although hazardous as a foundation for a normative framework, can function effectively as the basis for a descriptive conceptual framework for law and policy.

I. Inadequacies of Environmental-Harm Frameworks

This Part critiques conventional approaches to environmental law that attempt to organize the field in terms of environmental harm. It begins by identifying the core factual characteristics of environmental problems and then explains why a conceptual framework built around environmental harm fails to reflect those core characteristics. It then deepens this critique by pointing out another inadequacy of environmental harm: its submersion of implicit descriptive and normative baselines.

A. *Environmental Problems*

Environmental problems present controversies over the proper relationship between humans and environmental resources such as forest lands, watersheds, and the atmosphere. Three distinctive functional characteristics of environmental resources shape their role in these controversies: environmental resources are public; they are physical and natural; and they are pervasively interrelated.[7]

As public resources, environmental resources usually are subject to common access and are managed collectively.[8] Both of these factors exacerbate conflicts. Environmental resources often have tremendous value for a wide variety of purposes. Open access to such resources allows large numbers of people to derive many different benefits from them, both directly and indirectly. Because environmental resources are common-access resources, their use tends to raise the difficulty known as the tragedy of the commons, in which individuals use a resource without internalizing the effect that their use has on other users and, as a result, use the resource in ways that are not socially optimal.[9] In addition, because environmental resources are collectively managed, they encounter collective action problems.[10] Additional attributes of environmental resources make them particularly difficult to manage or regulate collectively.[11]

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7. *See* Aagaard, *supra* note 2, at 264–69.

8. To identify environmental resources as public is not to suggest that environmental law does not apply to activities that occur on private property. *Cf. id.* at 264 ("Environmental problems involve a physical resource that is in important senses publicly rather than privately valued, owned, and/or controlled."). Even activities that appear entirely confined to private land can affect public resources—for example, pavement on a private driveway can increase stormwater runoff, which contributes to the pollution of public rivers. *See, e.g.*, Robert Pitt, Richard Field, Melinda Lalor & Michael Brown, *Urban Stormwater Toxic Pollutants: Assessment, Sources, and Treatability*, 67 WATER ENV'T RES. 260, 262 (1995) (noting the contribution of impervious source areas, such as pavement, to stormwater runoff pollution).

9. *See* Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1244–45 (1968); *see also* Aagaard, *supra* note 2, at 265–66 (discussing the collective action problems that occur when individuals have unregulated access to public resources).

10. *See generally* RUSSELL HARDIN, COLLECTIVE ACTION 50–66 (1982) (discussing the basic logic of collective action); MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS 1–2 (rev. ed. 1971) (explaining the disincentives for individuals in large groups to act collectively); ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION 6–7 (James E. Alt & Douglass C. North eds., 1990) (noting the generally recognized difficulties with collective action).

11. *See* Aagaard, *supra* note 2, at 267–68 (discussing various characteristics of environmental resources). For example, environmental resources often have long traditions and customs of relatively uninhibited exploitation and open access. *Cf.* Peter Manus, *Our Environmental Rebels: An Average American Law Professor's Perspective on Environmental*

As physical and natural resources, environmental resources are subject to limited human control. Human activities affect environmental resources, but biological, chemical, physical, and other natural processes play a crucial role in determining the condition of environmental resources. These natural processes determine in significant part the relationship between various human interactions and environmental resources. Natural processes, for example, determine the dispersal of air pollutant emissions in the atmosphere, which determines how pollutants affect human health. Humans generally cannot create new or more environmental resources; they can only affect the condition of environmental resources—either intentionally or unintentionally. Environmental resources also are fundamentally physical, in that the benefits people derive from them are tied in some way to the physical condition of the resource. A person may, for example, engage in a recreational activity that requires or prefers for an environmental resource to be in a particular physical condition. Or a person may consume a product that, through its production or use, affects an environmental resource's physical condition.

The third core distinctive characteristic of environmental resources—pervasive ecological interconnectedness—creates complex interrelationships among humans and other constituents of ecological systems. These interrelationships create interdependencies among environmental uses, and their complexity can make it very difficult to determine how one benefit that people derive from an environmental resource is affecting, or could affect, other benefits.[12] For example, does electricity consumption affect visibility in the Grand Canyon?[13] This complexity poses difficulties for the task of managing conflicts over environmental resources, as conflicts may not be at all apparent, even after they arise.[14]

Advocacy and the Law, 40 NEW ENG. L. REV. 499, 518 (2006) ("The American jural system is based on a fundamental presumption that people bear no moral duties to refrain from exploiting the environment . . . .").

12.   *See* RICHARD J. LAZARUS, THE MAKING OF ENVIRONMENTAL LAW 33 (2004) ("[D]ue to the highly interrelated nature of the ecosystem, it is almost always a mistake to suppose that one can isolate a single discrete cause as the source of an environmental problem.").

13.   *See* Mark Crawford, *Scientists Battle over Grand Canyon Pollution*, 247 SCIENCE 911, 911–12 (1990) (explaining the complexities of determining whether a coal-fired power plant on the Arizona-Utah border contributes to haze in the Grand Canyon).

14.   *See infra* Part IV.A.

B. *The Environmental-Harm Framework*

The concept of environmental harm permeates environmental law. Environmental law often is described in terms of preventing environmental harm or its converse, protecting the environment.[15] Only somewhat less generally, many environmental statutes themselves refer to the protection of human health and the environment.[16] But environmental harm lacks a clear meaning and tends to collapse a wide variety of environmental effects into a single undifferentiated category. These characteristics limit environmental harm's ability to function as an organizing concept for environmental law.

1. *General Problems.* In some circumstances, environmental harm can be a useful shorthand for the objectives of environmental law. Environmental law regulates human activities that affect environmental resources that are part of functioning ecological systems. Human activities can damage ecological functions and impair ecosystem health in numerous ways, and people often refer to these various damages and impairments collectively as environmental harm. In certain respects, therefore, environmental law's regulation of environmental resources can be understood in terms of environmental harm. Moreover, tools exist by which to evaluate environmental harm. Science has developed ways of assessing ecosystem health, such as biodiversity,[17] ecological integrity,[18] and

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15. *See, e.g.*, sources cited *supra* note 1.

16. Lisa Heinzerling, *Reductionist Regulatory Reform*, 8 FORDHAM ENVTL. L.J. 459, 460 (1997) (noting that "'protection of human health and the environment' appears like a mantra in virtually every one of our environmental laws" (citing Clean Air Act §§ 108–109, 302(h), 42 U.S.C. §§ 7408–7409, 7602(h) (2006); Clean Water Act § 303(c)(2)(A), 33 U.S.C. § 1313(c)(2)(A) (2006); Comprehensive Environmental Response, Compensation, and Liability Act of 1980 § 121(d)(1), 42 U.S.C. § 9621(d)(1); Federal Insecticide, Fungicide, and Rodenticide Act § 3, 7 U.S.C. § 136 (2006); Resource Conservation and Recovery Act of 1976 § 1002, 42 U.S.C. § 6901 (2006); Toxic Substances Control Act § 2(a), 15 U.S.C. § 2601(a) (2006))).

17. *See* J.B. Ruhl, *Working Both (Positivist) Ends Toward a New (Pragmatist) Middle in Environmental Law*, 68 GEO. WASH. L. REV. 522, 542 (2000) (book review) ("Scientific research suggests that the concept of biological diversity, or biodiversity, is the key metric of ecosystem health. . . . Biodiversity measures the diversity of species in an ecosystem as an index of its health.").

18. *See* Jeffrey D. Parrish, David P. Braun & Robert S. Unnasch, *Are We Conserving What We Say We Are? Measuring Ecological Integrity Within Protected Areas*, 53 BIOSCIENCE 851, 852 (2003) ("[W]e define *ecological integrity* as the ability of an ecological system to support and maintain a community of organisms that has species composition, diversity, and functional organization comparable to those of natural habitats within a region.").

indicator species.[19] Scientists can measure harm to environmental resources in terms of these indicators of ecological health—for example, as a reduction in biodiversity.[20]

But when environmental problems get difficult or complicated—as, given the complex interrelationships among uses of environmental resources, they so easily and often do—the loose terminology of environmental harm becomes problematic. In particular, using environmental harm as an organizing concept conceals two important aspects of environmental problems and lawmaking: complexity and normativity.

The environmental-harm framework masks complexity in several respects. Environmental harms take many different forms, and the differences among these forms are potentially important to environmental decisionmaking. Although measures of ecological health exist, there is no single measure of ecological health and thus no single clear measure of environmental harm.[21] Impacts referred to as environmental harm or associated with environmental harm occur

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19. *See* Peter B. Landres, Jared Verner & Jack Ward Thomas, *Ecological Uses of Vertebrate Indicator Species: A Critique*, 2 CONSERVATION BIOLOGY 316, 317 (1988) ("[A]n indicator species is an organism whose characteristics (e.g., presence or absence, population density, dispersion, reproductive success) are used as an index of attributes too difficult, inconvenient, or expensive to measure for other species or environmental conditions of interest."); *see also* S.E. Bunn, P.M. Davies & T.D. Mosisch, *Ecosystem Measures of River Health and Their Response to Riparian and Catchment Degradation*, 41 FRESHWATER BIOLOGY 333, 334 (1999) (advocating the use of ecosystem-health measures, such as "the direct measurement of amounts of organic carbon produced and consumed within the system, and analysis of the fate of terrestrial and instream sources of organic matter in the aquatic food web").

20. *See, e.g.*, Joy B. Zedler, John C. Callaway & Gary Sullivan, *Declining Biodiversity: Why Species Matter and How Their Functions Might Be Restored in Californian Tidal Marshes*, 51 BIOSCIENCE 1005, 1005 (2001) (noting that many conservationists and researchers are "[a]larmed by declining biodiversity").

21. *See, e.g.*, Bunn et al., *supra* note 19, at 334 ("Patterns of species distribution and abundance [i.e., biodiversity measures] are undoubtedly important elements of river health but often contribute little to an understanding of how a system works, and therefore should not be the sole consideration." (citation omitted)); J.E. Hewitt, M.J. Anderson & S.F. Thrush, *Assessing and Monitoring Ecological Community Health in Marine Systems*, 15 ECOLOGICAL APPLICATIONS 942, 942 (2005) (noting "widespread disagreement as to the[] usefulness" of existing measures of ecological diversity and contamination); Parrish et al., *supra* note 18, at 852 (noting the difficulty of finding a measure of biodiversity that is, among other things, "scientifically defensible" and "practical"); Christopher D. Stone, *Land Use and Biodiversity*, 27 ECOLOGY L.Q. 967, 970 (2001) ("[T]here is no single objective measure of biodiversity . . . ." (emphasis omitted)); Stephen C. Trombulak, *Ecological Health and the Northern Forest*, 19 VT. L. REV. 283, 290 (1995) (noting that biodiversity is just one of many indicators of ecological health and that there are multiple measures of biodiversity).

in a variety of forms, such as loss of wildlife habitat,[22] water pollution,[23] and climate change.[24] An attempt to conceptualize environmental lawmaking in terms of environmental harm thus quickly encounters problems. For example, if air pollution and water pollution both count as environmental harms, how should lawmakers compare the harm of air pollution to the harm of water pollution? They often need to make such comparisons because options present alternatives, many or all of which cause some form of environmental harm. "Decisionmaking requires trade-offs," and "[t]rade-offs require comparative evaluation of competing claims, whether this evaluation is done explicitly . . . or implicitly, by taking a particular decision."[25] Merely observing that different options cause divergent environmental harms does not do much work; lawmakers need a more particularized way of analyzing environmental effects and choosing among options.[26]

Conceptualizing environmental lawmaking in terms of environmental protection or environmental harm also obscures the complexity of the values and interests that are associated with

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22. *See, e.g.*, Lenore Fahrig, *Relative Effects of Habitat Loss and Fragmentation on Population Extinction*, 61 J. WILDLIFE MGMT. 603, 603 (1997) ("Destruction and fragmentation . . . of natural habitats are the 2 most important factors in the current species extinction event." (citation omitted)).

23. *See, e.g.*, J.B. Ruhl, *Farms, Their Environmental Harms, and Environmental Law*, 27 ECOLOGY L.Q. 263, 274–91 (2000) (describing various environmental harms resulting from water pollution).

24. *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Summary for Policy Makers*, *in* CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS, CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 1, 2–18 (Susan Solomon et al. eds., 2007), *available at* http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf (summarizing recent findings on climate change).

25. Lynn A. Maguire & James Justus, *Why Intrinsic Value Is a Poor Basis for Conservation Decisions*, 58 BIOSCIENCE 910, 910 (2008).

26. One could compare environmental effects by converting different effects to monetary values, but the monetary reductionism of cost-benefit analysis has been widely criticized on numerous bases, including its hidden biases. *See, e.g.*, Frank Ackerman & Lisa Heinzerling, *Pricing the Priceless: Cost-Benefit Analysis of Environmental Protection*, 150 U. PA. L. REV. 1553, 1584 (2002) ("Cost-benefit analysis cannot overcome its fatal flaw: it is completely reliant on the impossible attempt to price the priceless values of life, health, nature, and the future."); David M. Driesen, *Is Cost-Benefit Analysis Neutral?*, 77 U. COLO. L. REV. 335, 402 (2006) (concluding that cost-benefit analysis "is not neutral in practice and is, in many ways, anti-environmental in theory"); Sidney A. Shapiro & Christopher H. Schroeder, *Beyond Cost-Benefit Analysis: A Pragmatic Reorientation*, 32 HARV. ENVTL. L. REV. 433, 457 (2008) ("The results of [cost-benefit analysis] are not only inaccurate, they are often biased by the analyst's policy preferences or [by] the value judgments that are implicit in rational choice methodologies."); *see also infra* Part III.B.

environmental law. Environmental resources are subject to varied and numerous uses.[27] The goals of environmental law, accordingly, are not limited to environmental protection.[28] Environmental protection, moreover, means different things to different people in different situations.[29] In any given scenario, a diverse range of values and interests may fall under the general category of environmental protection, including tourism, recreation, wildlife habitat, sustainable resource extraction, preservation, aesthetic enjoyment, and pollution prevention. Individuals may care about these different values and interests to varying degrees. Similarly, decision options may benefit or disadvantage these values and interests to varying degrees. Each of these values and interests may have different relationships to various measures of ecological health in different circumstances. A single individual, for example, may have one set of concerns with respect to national parks—say, preserving certain landmarks or flagship species—and quite different concerns with respect to local groundwater, which she uses for drinking water. Environmental harm is a poor proxy for the multitude of diverse and complicated mechanisms through which people derive benefits from the environment. Environmental protection is far from monolithic or unidimensional, and employing the broad categories of environmental protection or environmental harm obscures fundamental complexities implicated by the human relationship to environmental resources.[30]

Conceptualizing environmental problems in terms of environmental harm makes normative judgments in the guise of

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27. *See supra* Part I.A.

28. *See* John C. Dernbach, *Citizen Suits and Sustainability*, 10 WIDENER L. REV. 503, 517 (2004) ("We often say that the purpose of environmental law is to protect the environment. But it is much more complicated than that. To begin with, environmental law has never been aimed simply at protecting the environment."); Richard E. Levy & Robert L. Glicksman, *Judicial Activism and Restraint in the Supreme Court's Environmental Law Decisions*, 42 VAND. L. REV. 343, 376 n.147 (1989) ("[R]ecent environmental law decisions . . . emphasize that environmental statutes are compromise measures designed to achieve a variety of goals and that elevating environmental protection concerns above these other goals is too simplistic.").

29. *See* Albert C. Lin, *The Unifying Role of Harm in Environmental Law*, 2006 WIS. L. REV. 897, 900 ("Harm means different things to different people . . . .").

30. *See* John Wiens, *Diversity: The Dangers of Black-and-White Conservation*, 21 CONSERVATION BIOLOGY 1371, 1371 (2007) ("The ways in which people relate to a conservation landscape are many and varied, some with clear economic benefits, some with quasi-economic benefits, and some that come only through the knowledge that we are protecting biodiversity because it is there. There are multiple constituencies for conservation, and to succeed we must aim to be relevant to them all.").

factual observations. Whether the environment has been harmed seems like a purely factual question. But environmental harm assumes a baseline unharmed environment against which some event or change can be compared.[31] What is an unharmed environment? To the extent that an unharmed environment is a natural world, independent of human impacts, such a realm does not exist, for "[t]here really is no such thing as nature untainted by people."[32] If a natural world independent of human impact were the baseline, every human activity would be environmentally harmful merely on the basis of its association with people. Therefore, because people generally do not characterize every human activity as environmentally harmful, they must mean something else by environmental harm.

By characterizing only some human activities as environmentally harmful—even though all human activities affect the environment in some way—people implicitly make a judgment, often on the basis of unspoken criteria, that some human impacts are normatively inferior to others.[33] Thus, labeling something as environmentally harmful is more a statement of disapproval than a factual characterization.[34]

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31. *See* NEIL EVERNDEN, THE SOCIAL CREATION OF NATURE 5–6 (1992) ("In order for there to be perceptible pollution, there must first be an understanding of systemic order, an environmental norm."); John Copeland Nagle, *The Idea of Pollution*, 43 U.C. DAVIS L. REV. 1, 46 (2009) (noting that the idea of pollution "presuppose[s] a baseline condition that is unpolluted"); *see also* Nagle, *supra*, at 52, 54–55 (discussing the difficulty of identifying the baseline unpolluted environment).

32. Peter Kareiva, Sean Watts, Robert McDonald & Tim Boucher, *Domesticated Nature: Shaping Landscapes and Ecosystems for Human Welfare*, 316 SCIENCE 1866, 1866 (2007); *see also* William Cronon, *Introduction: In Search of Nature*, *in* UNCOMMON GROUND: TOWARD REINVENTING NATURE 23, 25 (William Cronon ed., 1995) ("The work of literary scholars, anthropologists, cultural historians, and critical theorists over the past several decades has yielded abundant evidence that 'nature' is not nearly so natural as it seems."); Paul J. Crutzen & Eugene F. Stoermer, *The "Anthropocene,"* GLOBAL CHANGE NEWSL. (Int'l Geosphere-Biosphere Programme, Stockholm, Swed.), May 2000, at 17, 17, *available at* http://www.igbp.kva.se/documents/resources/NL_41.pdf (contending that human impacts on the planet are so extensive that people should "use the term 'anthropocene' for the current geological epoch").

33. *See* Lin, *supra* note 29, at 901 ("'[H]arm' is a normative concept that reflects underlying social judgments about the good and the bad."); *id.* at 932 ("[W]hat qualifies as harm rests largely on societal norms about acceptable behavior."); Nagle, *supra* note 31, at 27 (noting that when the baseline unpolluted state is unclear, the idea of pollution lapses into "connoting moral defect"); John P. Safranek & Stephen J. Safranek, *Can the Right to Autonomy Be Resuscitated After* Glucksberg*?*, 69 U. COLO. L. REV. 731, 745 (1998) ("[W]hat constitutes harm . . . will be governed by one's view of the good.").

34. *See* Mark Sagoff, *Environmental Harm: Political Not Biological*, 22 J. AGRIC. & ENVTL. ETHICS 81, 81 (2009) ("The term 'environmental harm' . . . has no meaning in science, policy, or law."); *id.* at 84 ("The term 'environmental harm' . . . may possess an aesthetic, religious, spiritual, historical, cultural, or some other meaning to society; perhaps it can be explicated on

Because the concept of environmental harm is a descriptively broad and pliable category with important normative implications, the term can become a battleground over which effects count in environmental law and which do not. Thus, for example, in *Whitman v. American Trucking Ass'ns*,[35] the regulated industry argued that the Clean Air Act's[36] mandate to "protect the public health"[37] should incorporate consideration of the possibility that a stringent regulatory standard would economically devastate an industry, impoverishing its workers, who would suffer health losses as a result.[38] The Supreme Court rejected the industry's argument in that case,[39] and it is easy to deride the industry's attempt to characterize profit reductions as a form of environmental harm. Yet if environmental harm is treated as a purely descriptive term, without a clear baseline, arguments for an expansive definition of environmental harm are not as strained as they first may seem, especially in light of the principle—usually wielded by environmentalists—that everything affects everything.[40] If nature independent of humans does not exist, and everything affects

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these grounds. The concept of 'environmental harm,' however, has no referent in biology or in any other science."); *see also* Nagle, *supra* note 31, at 55 ("[T]he idea of a clean or pure environment is itself socially constructed."); Nagle, *supra* note 31, at 55 (noting that society's selection of a baseline unpolluted environmental condition merely reflects "its own preference for the condition of the environment").

35. Whitman v. Am. Trucking Ass'ns, 531 U.S. 457 (2001).

36. Clean Air Act, 42 U.S.C. §§ 7401–7671q (2006).

37. *Id.* § 7409(b)(1).

38. *Whitman*, 531 U.S. at 466; *see also* Reserve Mining Co. v. EPA, 514 F.2d 492, 537 (8th Cir. 1975) (citing, as support for a decision not to enjoin environmental violations by the Reserve Mining Company, the possibility that "ill health effects resulting from the prolonged unemployment of the head of the family on a closing of the Reserve facility may be more certain than the harm from drinking Lake Superior water or breathing Silver Bay air").

39. *Whitman*, 531 U.S. at 466–68.

40. *See, e.g.*, BARRY COMMONER, THE CLOSING CIRCLE: NATURE, MAN, AND TECHNOLOGY 33–39 (1971) (arguing that a change to an ecosystem can have expansive consequences due to "a simple fact about ecosystems—everything is connected to everything else"); Zygmunt J.B. Plater, *Environmental Law in the Political Ecosystem—Coping with the Reality of Politics*, 19 PACE ENVTL. L. REV. 423, 480–81 n.77 (2002) ("Environmental law's high purpose and aspiration is to make sense of the First Law of Ecology, that everything is connected to everything else."); *see also* ZYGMUNT J.B. PLATER, ROBERT H. ABRAMS, WILLIAM GOLDFARB, ROBERT L. GRAHAM, LISA HEINZERLING & DAVID A. WIRTH, ENVIRONMENTAL LAW AND POLICY: NATURE, LAW, AND SOCIETY 5 (3d ed. 2004) ("[The environmental perspective] starts from the premise of interconnectedness—that all human enterprises exist within one vast shared common context in which actions have collateral consequences that are relevant and should be considered . . . ."); PLATER ET AL., *supra*, at xxx ("As the First Law of Ecology says, everything is connected to everything else."); PLATER ET AL., *supra*, at 5 ("[T]he environmental perspective conceptualizes all human enterprises existing within one large system of interconnected systems.").

everything, then it is not so clear why mercury in the air is an environmental harm, but lack of access to nutritious food is not.[41]

To the extent that environmental protection and environmental harm are understood as complicated and varied—rather than simple and unitary—their use may be excusable and even useful. Thus, for example, Professor Richard Lazarus uses the concept of ecological injury—a variant of environmental harm—not to treat all environmental effects monolithically, but instead to highlight certain common factual characteristics among the various harms that occur through the mechanism of effects on the environment.[42]

Professor Albert Lin's examination of the role of harm in environmental law stands as another example of an appropriate and helpful use of environmental harm.[43] Lin argues that harm plays a "[u]nifying [r]ole"[44] in environmental law, in that harm is "a necessary condition for government intervention."[45] Lin implicitly recognizes, however, that harm in environmental law, properly understood, is not harm to the environment but rather harm to a human interest that occurs through effects on the environment.[46] Lin proposes a theoretical framework for understanding harm in environmental law that views harm, in its various forms in environmental law, as "a normative concept that reflects underlying social judgments about the good and the bad."[47] Lin's focus thus differs from that of this Article, but his analysis supports the direction that this Article takes. In particular, Lin's focus on harm to human interests in environmental resources, rather than harm to the resources themselves, corroborates an approach that views environmental law in terms of conflicts over uses of environmental resources.

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41.   *Cf.* PLATER ET AL., *supra* note 40, at 5 (noting that when it is applied broadly, "the term 'environmental' may seem uselessly broad, describing nothing in particular").

42.   Richard J. Lazarus, *Restoring What's Environmental About Environmental Law in the Supreme Court*, 47 UCLA L. REV. 703, 745–48 (2000) (noting that injuries that arise in environmental law often are irreversible, catastrophic, and continuing; physically and temporally distant from the actions that cause them; uncertain; resulting from multiple causes; and nonhuman and noneconomic).

43.   *See* Lin, *supra* note 29.

44.   *Id.* at 897.

45.   *Id.* at 898.

46.   *See id.* at 926–27 ("[A] working understanding of harm in environmental law should begin with harm as a setback to a person's interests." (footnote omitted)).

47.   *Id.* at 901.

Professor Dan Farber's 1999 book *Eco-Pragmatism*,[48] on the other hand, is an example of an environmental-harm framework that illustrates some of the drawbacks of using environmental harm as an organizing principle for environmental law. *Eco-Pragmatism* is a masterful work that makes compelling arguments in favor of Farber's pragmatic approach to environmental lawmaking. Indeed, *Eco-Pragmatism* has been very well received by environmental scholars,[49] is widely cited,[50] and was the subject of a tributary symposium in the *Minnesota Law Review*.[51] *Eco-Pragmatism* thus stands as an example of the best of the environmental-harm approaches to environmental law.

In *Eco-Pragmatism*, Farber observes that environmental lawmaking involves excruciatingly difficult tradeoffs,[52] creating a decisionmaking context in which "there is no escaping hard judgments."[53] He argues that, in making such judgments, a commitment to "environmental quality" should form the baseline for environmental lawmaking.[54] As to the substance of what it means to protect the environment, however, Farber is not precise.[55] Farber

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48. FARBER, *supra* note 1.

49. *See, e.g.*, J.B. Ruhl, *A Manifesto for the Radical Middle*, 38 IDAHO L. REV. 385, 387 (2002) (praising *Eco-Pragmatism* as a "tour de force"); *see also* Amy J. Wildermuth, Eco-Pragmatism *and Ecology: What's Leopold Got to Do with It?*, 87 MINN. L. REV. 1145, 1145 n.2 (2003) ("Many have sung the praises of Farber's eco-pragmatism . . . .").

50. *See, e.g.*, Alejandro E. Camacho, *Can Regulation Evolve? Lessons from a Study in Maladaptive Management*, 55 UCLA L. REV. 293, 307 n.81 (2007); Jamie A. Grodsky, *Genetics and Environmental Law: Redefining Public Health*, 93 CALIF. L. REV. 171, 256 n.398 (2005); Michael P. Vandenbergh, *Order Without Social Norms: How Personal Norm Activation Can Protect the Environment*, 99 NW. U. L. REV. 1101, 1140 n.166 (2005); Douglas A. Kysar, *The Consultants' Republic*, 121 HARV. L. REV. 2041, 2048 n.20 (2008) (book review).

51. Symposium, *The Pragmatic Ecologist: Environmental Protection as a Jurisdynamic Experience*, 97 MINN. L. REV. 847 (2003).

52. FARBER, *supra* note 1, at 1, 94.

53. *Id.* at 93.

54. *E.g.*, *id.* at 94; *see also id.* at 97 (contending that federal environmental law does, and should, adopt "a presumption in favor of environmental protection"); *id.* at 103 (contending that "Congress has adopted a pro-environmental baseline" that "treat[s] environmental risks as impermissible except when required by considerations of feasibility"); *id.* at 109 (arguing in favor of applying "environmental values" to guide lawmaking).

55. *See* Wildermuth, *supra* note 49, at 1157 (chiding Farber gently for "talk[ing] vaguely about a presumption in favor of the environment"). Wildermuth proposes ecological science, particularly the work of ecologist Aldo Leopold, as a source for "usefully augment[ing] Farber's eco-pragmatic framework and its central concept of an environmental baseline." *Id.* She draws on Leopold's concept of land health, which he intended to reflect "'the health of the land as a whole.'" *Id.* at 1152 (quoting Aldo Leopold, *Biotic Land-Use*, *in* FOR THE HEALTH OF THE LAND 198, 202 (J. Baird Callicott & Eric T. Freyfogle eds., 1999)). Leopold identified soil

describes the analytical process by which he believes environmental lawmaking should proceed—"a hybrid of feasibility analysis and cost-benefit analysis"[56]—but he does not define what counts as environmental protection. It is unclear how to measure the environmental quality that forms Farber's baseline, especially when decisions involve tradeoffs among different types of pollution or degradation, or tradeoffs among values that concurrently claim to fall within the category of environmental protection. In short, Farber's environmental baseline raises normative questions—which it does not answer—about what society wants for the environment. The relationship between humans and environmental resources, both actually and aspirationally, is multidimensional and complicated; yet this is not well reflected in the concept of environmental harm. Because *Eco-Pragmatism* is among the best approaches to environmental law that rely on the concept of environmental harm, its limitations support a critique of environmental harm more generally.

    2. *Problems with Baselines.*   The hazards of understanding environmental lawmaking in terms of environmental harm are an example of the broader recurring problems that baselines cause in law and policy.[57] Baselines can operate factually and normatively, and the environmental-harm framework raises problems with both types.

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fertility and biodiversity as potential measures of land health, though he recognized that no single measure could capture overall land health. *Id.* at 1152–53 (citing Leopold, *supra*, at 202–05). Ecology, however, cannot overcome the limitations of an environmental-harm approach. *See supra* note 21 and accompanying text.

    56.   FARBER, *supra* note 1, at 116.

    57.   *See, e.g.*, Michael C. Blumm & Viki A. Nadol, *The Decline of the Hydropower Czar and the Rise of Agency Pluralism in Hydroelectric Licensing*, 26 COLUM. J. ENVTL. L. 81, 114 n.219 (2001) (noting the importance of the Federal Energy Regulatory Commission's selection of a baseline to its decisions whether to relicense an existing hydropower project); Madeline June Kass, *A NEPA Climate Paradox: Taking Greenhouse Gases into Account in Threshold Significance Determinations*, 42 IND. L. REV. 47, 57–58 (2009) (noting the absence of clear baselines for determining which environmental impacts qualify as significant under the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. §§ 4321–4370h (2006)); Julie Thrower, Comment, *Adaptive Management and NEPA: How a Nonequilibrium View of Ecosystems Mandates Flexible Regulation*, 33 ECOLOGY L.Q. 871, 872–73 (2006) ("Recognition of the constantly changing nature of ecosystems has undermined the foundational assumptions of NEPA, challenging the notion that we can establish baselines to identify an 'undisturbed' ecosystem."). The problem of baselines, although particularly acute in environmental policy, is not unique to that arena. Scholars have noted baseline problems in other areas of the law as well. *See*, *e.g.*, Larry Alexander & Saikrishna B. Prakash, *Tempest in an Empty Teapot: Why the Constitution Does Not Regulate Gerrymandering*, 50 WM. & MARY L. REV. 1, 16–17 (2008) ("For people to speak of such gerrymanders as vote diluting, they must have in mind some ideal

Factual baselines are reference points for factual comparisons.[58] Confusion arises when factual baselines are unclear, causing comparisons and claims to become facile and susceptible to manipulation for rhetorical advantage.[59] For example, in 2002, the George W. Bush administration announced its Clear Skies Initiative (Clear Skies), a cap-and-trade program for regulating the emissions of three air pollutants: sulfur dioxide, nitrogen oxides, and mercury.[60] The administration and the Environmental Protection Agency (EPA) characterized Clear Skies as "an aggressive plan to cut power plant pollution by 70 percent."[61] Critics of the administration, however,

demographic baseline."); John F. Duffy, *Intellectual Property Isolationism and the Average Cost Thesis*, 83 TEX. L. REV. 1077, 1086 (2005) ("Negative externalities can be distinguished from positive externalities only by identifying a baseline, and the choice of a baseline is generally considered arbitrary as a matter of theory."); Seth F. Kreimer, *Allocational Sanctions: The Problem of Negative Rights in a Positive State*, 132 U. PA. L. REV. 1293, 1352 (1984) ("[T]he distinction between liberty-expanding offers and liberty-reducing threats turns on the establishment of an acceptable baseline against which to measure a person's position after imposition of an allocation."); Gil Seinfeld, *The Federal Courts as a Franchise: Rethinking the Justifications for Federal Question Jurisdiction*, 97 CALIF. L. REV. 95, 150 (2009) ("[A]cknowledging the fact that the benefits of federal court access are concentrated on identifiable parties introduces a 'baseline' problem to the task of jurisdictional allocation."); Cass R. Sunstein & Arden Rowell, *On Discounting Regulatory Benefits: Risk, Money, and Intergenerational Equity*, 74 U. CHI. L. REV. 171, 200 (2007) ("In short, it is necessary to identify the baseline against which any 'compensation' [to future generations] must be paid, and the real work is being done by that baseline, not by the idea of compensation.").

58.   *See* Paul Roberts, *From Theory into Practice: Introducing the Reference Class Problem*, 11 INT'L. J. EVIDENCE & PROOF 243, 245 (2007) ("Every factual generalisation implies a reference class . . . ."). Professor Edward Cheng has summarized the reference-class problem as follows: "Inference often involves abstracting a person (or event or thing) to a few salient characteristics, and then comparing that person [or event or thing] with others having the same or similar characteristics. But the problem becomes: How does one choose the comparison group?" Edward K. Cheng, *A Practical Solution to the Reference Class Problem*, 109 COLUM. L. REV. 2081, 2085 (2009).

59.   Difficulties also arise with the unavailability of information to serve as a baseline. *See, e.g.*, Bradley C. Karkkainen, *Bottlenecks and Baselines: Tackling Information Deficits in Environmental Regulation*, 86 TEX. L. REV. 1409, 1435 (2008) ("Another recurring problem across the landscape of environmental law and policy is the lack of good baseline information on environmental conditions and stressors."). In this Article, however, I am focused on conceptual problems with baselines.

60.   Press Release, EPA, Clear Skies Legislation Introduced in Congress Proposal Will Improve Air Quality, Prevent Premature Deaths, Illnesses (July 29, 2002), *available at* http://yosemite.epa.gov/opa/admpress.nsf/b1ab9f485b098972852562e7004dc686/c1b111b0d87d59 1385256c0500625054.

61.   *Id.*; *see also* John D. Graham, *Saving Lives Through Administrative Law and Economics*, 157 U. PA. L. REV. 395, 470 (2008) ("Clear Skies called for a uniform, nationwide 70% reduction in three pollutants (sulfur dioxide, nitrogen dioxide, and mercury)."); Press Release, EPA, New EPA Data Show Dramatic Air Quality Improvements from Clear Skies Initiative (July 1, 2002), *available at* http://yosemite.epa.gov/opa/admpress.nsf/

asserted that Clear Skies "would increase air pollution"[62] and "would let plants pollute more."[63] Arguably, both characterizations were accurate. The initiative was projected to reduce emissions of sulfur dioxide, nitrogen oxides, and mercury by at least 70 percent, as compared with emissions in 2000.[64] On the other hand, some analyses showed that Clear Skies, as compared with continued implementation and strict enforcement of existing law, would result in greater emissions.[65] Thus, both the Bush administration and its environmental critics were able to make true, yet conflicting, claims about Clear Skies' effect on air pollution—that Clear Skies would both protect the environment and harm the environment—based on different underlying, implicit factual baselines. The audience of these competing claims, moreover, had no way of evaluating their relative validity. As long as factual baselines are unclear, the bases for the competing factual claims cannot be assessed, and factual validity becomes indeterminable.

In other situations, the problem is not an unidentified baseline but rather alternative outcomes that are incommensurable in terms of environmental harm. In 2004, for example, the EPA issued regulations pursuant to Section 316(b) of the Clean Water Act[66] requiring power plants to employ certain technologies to protect aquatic organisms from the plants' cooling-water intake systems.[67] Environmental groups wanted the EPA to require more stringent

b1ab9f485b098972852562e7004dc686/3feaba8793ea23c885256be9005c5e75; Press Release, Nat'l Oceanic and Atmospheric Admin., President Announces Clear Skies & Global Climate Change Initiatives (Feb. 14, 2002), *available at* http://georgewbush-whitehouse.archives.gov/news/releases/2002/02/20020214-5.html.

62.   Press Release, Senator Sheldon Whitehouse, In Morning Speech, Whitehouse Sharply Criticizes Political Influence at EPA (May 2, 2008), *available at* http://whitehouse.senate.gov/newsroom/speeches/speech/?id=a9de6a3a-8f71-4472-a52a-03e959597e01.

63.   Press Release, Natural Res. Def. Council, Clear Skies Would Let Plants Pollute More, Study Concludes (Jan. 13, 2005), *available at* http://www.nrdc.org/bushrecord/airenergy_powerplants.asp (follow "Clear Skies would let plants pollute more, study concludes" hyperlink).

64.   *Clear Skies: Frequent Questions*, EPA, http://www.epa.gov/air/clearskies/faqs.html (last visited Mar. 5, 2011).

65.   *See* Ken Baumel, *Energy Vendors, Environmentalists at Odds over 'Clear Skies,'* NE. PA. BUS. J., Oct. 1, 2002, http://www.allbusiness.com/government/environmental-regulations/1105612-1.html.

66.   Clean Water Act § 316(b), 33 U.S.C. § 1326(b) (2006). The Clean Water Act is codified at 33 U.S.C. §§ 1251–1387.

67.   National Pollutant Discharge Elimination System—Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities, 69 Fed. Reg. 41,576, 41,605 (July 9, 2004).

closed-cycle technology that would kill fewer aquatic organisms.[68] The EPA declined on the ground that the closed-cycle technology would cost too much, given the limited benefits it would generate.[69] Among other things, the more stringent closed-cycle technology would have reduced the energy efficiency of power plants, which in turn would have increased air pollution.[70] The options posed a tradeoff of environmental outcomes—dead aquatic life versus air pollution—that environmental harm provides no basis for comparing.

Baselines, moreover, are not only problematic due to their lack of clarity and their susceptibility to manipulation. The deeper difficulty with baselines is that they insert normativity into putatively descriptive claims. Baselines operate normatively to the extent that they compete for a default normative position. "A baseline, in this context, is a state of affairs that requires no justification, and that establishes a norm, so that any deviations from the baseline require special justification."[71] Normative baselines cause confusion insofar as they entail hidden normative assumptions about the problems at issue. Take the example of the 2000 Supreme Court case, *Friends of the Earth, Inc. v. Laidlaw Environmental Services (TOC), Inc.*[72] Between 1987 and 1995, Laidlaw Environmental Services, which operated a hazardous waste incinerator in South Carolina, repeatedly discharged mercury into the North Tyger River in amounts that exceeded the limits in Laidlaw's Clean Water Act permit.[73] The permit violations did not result in any demonstrable health risk or environmental damage—despite the permit exceedance, water quality in the North Tyger River "exceed[ed] levels necessary to support propagation of fish, shellfish, and wildlife, and recreation in and on the water."[74] Some nearby residents, however, complained that their concern that Laidlaw's discharges were polluting the water had

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68.   Entergy Corp. v. Riverkeeper, Inc., 129 S. Ct. 1498, 1504 (2009).

69.   National Pollutant Discharge Elimination System—Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities, 69 Fed. Reg. at 41,601–06.

70.   *Id.* at 41,605.

71.   Daniel A. Farber, *Playing the Baseline: Civil Rights, Environmental Law, and Statutory Interpretation*, 91 COLUM. L. REV. 676, 678 n.12 (1991) (reviewing CASS R. SUNSTEIN, AFTER THE RIGHTS REVOLUTION: RECONCEIVING THE REGULATORY STATE (1990)).

72.   Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc., 528 U.S. 167 (2000).

73.   *Id.* at 175–76.

74.   Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc., 956 F. Supp. 588, 602 (D.S.C. 1997), *vacated*, 149 F.3d 303 (4th Cir. 1998), *rev'd*, 528 U.S. 167 (2000).

affected their recreational use of the river.[75] In such a situation, what counts as harm? Were the river users harmed because they curtailed their use of the river out of concern about Laidlaw's mercury discharges, or must they show damage to the river itself? The issue was of considerable practical significance to the parties, given that the plaintiffs were required to demonstrate an injury to have standing to bring their suit.[76]

Take another example: In 2005–06, the National Park Service eradicated thousands of feral pigs living on Santa Cruz Island in the Channel Islands National Park off the coast of California.[77] The pigs, descendants of farm animals brought to the island in the 1850s, had proliferated and disrupted the island's native foxes and plants.[78] The Park Service hailed the pig eradication program as an important step toward improving the island's ecosystem.[79] Some citizens' groups, however, assailed the program as a barbaric slaughter of wildlife.[80] Thus, both sides seized the mantle of environmental harm to support their conflicting objectives.

These examples illustrate that, although baselines are often used in analyses that appear factual and descriptive, the choice of a baseline has a strong normative aspect. Thus, the Bush administration compared Clear Skies to existing emissions on the implicit normative premise that the success of air pollution laws should be measured by whether they reduce pollution below existing levels. If Clear Skies would reduce both the economic costs of regulatory compliance and air pollution, the administration apparently reasoned, then no one could reasonably oppose it. Environmentalist critics disagreed with the Bush administration's use of existing emissions levels as the baseline for comparison because their goal was to maximize reductions in air pollution. Therefore, they measured Clear Skies against other alternatives that decreased emissions even further. The

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75. *Laidlaw*, 528 U.S. at 181–83, 198.

76. *Id.*

77. Gregory W. Griggs, *Island Pig Eradication Completed*, L.A. TIMES, Aug. 30, 2007, at B3.

78. *Id.*

79. *See Restoring Santa Cruz Island*, NAT'L PARK SERV., http://www.nps.gov/chis/naturescience/restoring-santa-cruz-island.htm (last visited Mar. 5, 2011) (indicating that the feral pig program was "the most important action that [could] be taken to protect and restore" the island).

80. *See Santa Cruz Island Pigs*, IN DEF. OF ANIMALS WILDLIFE CAMPAIGN, http://www.idausa.org/campaigns/wildlife/santa_cruz_island_pigs.html (last visited Mar. 5, 2011) (describing the program as a "horrific event").

administration's and environmentalists' factual claims conflicted because their underlying normative ideals, each of which supported its own implicit baseline, differed.

In sum, environmental harm as an analytical tool for understanding environmental lawmaking is fundamentally flawed. The environmental-harm framework undeniably has intuitive appeal. It frames vexing problems simply and accessibly in ways that correspond to deep normative assumptions about the proper relationship between humans and environmental resources. No one, for example, wants to be responsible for harming the environment. But the very traits that give environmental harm intuitive appeal also make it tremendously problematic as an organizing principle for environmental law and as a foundation for discussion among people with differing viewpoints. Environmental harm incorporates factual and normative baselines that are implicit, unclear, and contested, thereby obscuring factual complexity and normativity. The environmental-harm framework thus undermines possibilities for thoughtful engagement and deliberation in policymaking and lawmaking by allowing factual and normative claims to remain unarticulated and undefended.

II. The Use-Conflict Framework

This Part describes the basic elements of the use-conflict framework and then examines the framework's key components in detail. It also illustrates the framework by applying it to the examples introduced in Part I.

A. Basics of the Framework

An analytical framework for environmental law should focus on the most salient aspects of environmental problems. Part I argued that environmental harm fails as an organizing concept for environmental law because it does not capture the complex interrelationships between humans and environmental resources and because it conceals important normative judgments. The use-conflict framework, however, proceeds from the recognition that people care about environmental resources insofar as they derive some form of value from them—for example, by consuming the goods they produce; by using them directly for various economic, recreational, social, or spiritual purposes; by appreciating the benefits they confer on other people and on other species; or by simply appreciating them.

I refer collectively to all of these means of deriving value from environmental resources as *uses*. The use-conflict framework employs uses as the building blocks—the primary units of analysis—for its conceptualization of environmental law.

Given that environmental uses reflect human relationships to environmental resources in their various forms, it follows that environmental problems arise when people place competing demands on resources. Demands on an environmental resource compete when uses conflict with each other, in the sense that desired uses are associated with differing physical conditions of the resource. The use-conflict framework therefore conceptualizes environmental problems as situations of conflicting uses of environmental resources.

If conflicts among uses define environmental problems, then the management of use conflicts defines environmental decisionmaking. The use-conflict framework conceptualizes environmental lawmaking as the management of conflicts among uses of environmental resources. Lawmaking institutions faced with a decision affecting a resource choose among various available options, each of which carries with it certain advantages and disadvantages regarding the potential uses of the resource. The selection of an option manages conflicts among the uses of the resource by regulating those uses. Thus, use conflicts underlie and shape the lawmaking choice. The question of how to resolve these conflicts, moreover, implicates notions of value, for it is values—however defined and from whatever source—that lead a lawmaker to choose one decision option over another.

In addition to focusing on the most salient aspects of environmental problems, a framework for environmental lawmaking should reflect the fundamental characteristics of environmental problems, which are common and distinctive to environmental law: environmental resources are public; they are physical and natural; and they are pervasively interrelated.[81] The use-conflict framework posits that environmental problems are, at their core, conflicts over the management of resources that arise when potential uses of those resources conflict, and that the characteristics of resources tend to

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81. *See supra* Part I.A. If there were no such distinctive characteristics, then there would be no reason to construct a framework specific to environmental law. *See generally* Aagaard, *supra* note 2, at 244 ("For a legal field to be legitimate, there must be a good reason to focus on that particular category; that is, there must be some reason not to look at some broader set of materials. Distinctiveness—the idea that some features of a field are distinct to that field and not present in other fields—provides just such a justification.").

give rise to conflicts that are intense, complicated, and multidimensional. The use-conflict framework thus properly conceptualizes the human relationship to the environment as a complex web of pervasively interrelated uses of environmental resources that defies reduction into oversimplified categories, such as environmental harm.

The use-conflict framework is a conceptual framework—a way of organizing thinking about environmental problems and lawmaking. It is not a decision model or method. It does not predict or endorse particular policy positions or decision outcomes. It does, however, provide an intellectual structure for facilitating thoughtful analysis and debate about environmental law issues in whatever context they arise.

B. *Uses*

To understand the use-conflict framework's contention that environmental law is fundamentally about conflicts among uses of environmental resources requires a clear understanding of what a *use* means in this context. This Section defines *use*, emphasizing that its breadth encompasses the broad scope of all benefits—economic, but also psychological and spiritual, material and immaterial, direct and indirect—that people derive from environmental resources. It explains how commonalities between the use-conflict framework and the concept of ecosystem services—a leading existing approach to analyzing environmental benefits—support the use-conflict framework. In particular, the use-conflict framework incorporates the insights of ecosystem-services analyses into a descriptive, conceptual framework of environmental decisionmaking.

An environmental use, as the use-conflict framework employs the term, is any means by which people derive value from an environmental resource. Thus, breathing air, grazing cattle in a meadow, taking water from a river for irrigation, emitting air pollutants while driving a car, canoeing on a lake, admiring a stream, or even appreciating the existence of a stream without seeing it or taking anything physical from it, are all examples of uses of environmental resources.

Such an expansive definition of an environmental use may conflict in some ways with an intuitive sense of what the term *use* should encompass. One might question how appreciating the existence of a stream is a use, when that appreciation does not involve

one's physical presence at the stream or taking anything physical from the stream, either directly or indirectly. That is, *use* may seem to have an inherent physical component that is missing from the mere appreciation of the existence of an environmental resource.[82]

The use-conflict framework's broad definition of *use* does not, however, unmoor the term from physicality. Uses of environmental resources invariably are tied to the physical state of the resource, regardless of whether the person deriving the benefit has any physical involvement with or presence at the resource. For some uses, the link is the physical condition of the environmental resource that is necessary, or preferable, to support the use. For example, a river is a better source of drinking water if it is relatively free of contaminants. An area of wilderness backcountry may be appreciated, even by people who never see it or visit it, because it is relatively undisturbed by human activity. For other uses, the relationship may run in the opposite direction, meaning that no particular physical condition is required to support the use, but that the use changes the physical condition of the resource. A car generally does not require clean air to operate,[83] but the car's emissions increase the amount of certain

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82. *But see* WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 1299 (1984) ("USE implies availing oneself of something as a means or instrument to an end."). Perhaps reflecting this intuition, some scholars have drawn distinctions between the different means by which people derive value from an environmental resource. Some distinguish *use value* from *nonuse value*. *E.g.*, Michael Lockwood, *Integration of Natural Area Values: Conceptual Foundations and Methodological Approaches*, 12 AUSTRALASIAN J. ENVTL. MGMT. 8, 11 (2005); Thomas A. More, James R. Averill & Thomas H. Stevens, *Values and Economics in Environmental Management: A Perspective and Critique*, 48 J. ENVTL. MGMT. 397, 398 (1996). Some further classify use value into *current use value*, *option value*, and *quasi-option value*. *E.g.*, Alan Randall & John R. Stoll, *Existence Value in a Total Valuation Framework*, *in* MANAGING AIR QUALITY AND SCENIC RESOURCES AT NATIONAL PARKS AND WILDERNESS AREAS 265, 267 (Robert D. Rowe & Lauraine G. Chestnut eds., 1983). Similarly, the category of nonuse value has been subdivided further into *existence value*, *altruistic value*, and *bequest value*. *E.g.*, More et al., *supra*, at 398; *see also* Lockwood, *supra*, at 11 (identifying existence value and bequest value as the subcategories of nonuse value, but omitting the category of altruistic value).

Although these classifications help illustrate the various means by which people derive value from the environment and can be useful differentiations for other purposes, ultimately they offer little analytical value to the understanding of environmental decisionmaking or conflicts over environmental resources. Distinctions among benefits do not necessarily bear any relationship to the magnitude or importance of the value or benefit derived. For example, a person may derive much more benefit from the comfort she takes in the existence of Yosemite National Park (a nonuse value) than from the local stream in which she occasionally fishes (a use value).

83. *But see* Ross Anderson, *Mount St. Helens Remembered: 'God is speaking,'* SEATTLE TIMES, May 14, 2000, http://seattletimes.nwsource.com/special/helens/story1.html (noting that ash from the eruption of Mount St. Helens in 1980 clogged auto engine air filters); *The Plain*

pollutants in the air. Finally, some uses both affect and are affected by the physical condition of the resource. A meadow better supports grazing if it contains ample vegetation; in addition, using the meadow for grazing will affect the condition of the meadow. Any value derived from an environmental resource reflects the resource's physical characteristics in some sense. This physicality unites environmental uses, plays a critical role in determining various uses and the relationships among them, and is an important element of what makes environmental law distinctive.[84]

One also could object that the term *use* connotes an economic or even extractive orientation toward environmental resources and thereby marginalizes other environmental benefits associated with scientific, cultural, psychological, or spiritual values. Such an objection would be misplaced. An environmental use requires human appreciation to be relevant to human decisionmaking.[85] *Use* therefore

English Guide to the Clean Air Act, EPA, http://epa.gov/air/caa/peg/understand.html (last visited Mar. 5, 2011) (noting that during London's "killer fog" of 1952, "[t]he smog was so thick that buses could not run without guides walking ahead of them carrying lanterns").

   84.   Aagaard, *supra* note 2, at 264–68.

   85.   The nature of environmental problems is such that some authors who present normative perspectives on environmental problems perceive themselves as being in conflict with, or at least in contradistinction to, anthropocentrism. *Cf.* NAT'L RESEARCH COUNCIL, VALUING ECOSYSTEM SERVICES: TOWARD BETTER ENVIRONMENTAL DECISION-MAKING 35–36 (2004) (discussing the relationship and distinctions among intrinsic value, deontological value, and anthropocentric value). The use-conflict framework's relationship to anthropocentrism thus bears comment. The use-conflict framework is anthropocentric, but only to the extent that all lawmaking processes must be. That is, humans decide the content of law, so a value is reflected in the law only to the extent that a human participant in the lawmaking process is persuaded to act upon the value. Donald J. Boudreaux & Roger E. Meiners, *Existence Value and Other of Life's Ills*, *in* WHO OWNS THE ENVIRONMENT? 153, 181 n.2 (Peter J. Hill & Roger E. Meiners eds., 1998) ("Of course, if natural resources 'have value independent of human beings,' humans must acknowledge that value if there is to be any recognition of such value . . . ."); Frank B. Cross, *Natural Resource Damage Valuation*, 42 VAND. L. REV. 269, 296 (1989) ("Enlightened human preference thus may capture at least a portion of intrinsic value, but the preference is predicated necessarily on an informed human understanding of intrinsic value, not on the value itself.").

        The content of the human values represented in environmental lawmaking is, however, not necessarily anthropocentric, and the use-conflict framework recognizes that uses are not limited to material benefits that flow directly from environmental resources to humans. People often derive benefits from the environment through an appreciation that is separate from any direct material benefit to themselves. They may appreciate that other humans now or in future generations will breathe clean air, that wildlife and plants benefit from clean air, or even the mere existence of clean air now or in the future. All of these indirectly derived benefits (as well as the more direct benefits) qualify as uses under the use-conflict framework by virtue of the benefits people derive from them. People's appreciation of these benefits reflects the values they hold, be they anthropocentric or not. Thus, the process of environmental lawmaking—which is the focus of the use-conflict framework—necessarily is anthropocentric, even if the

appropriately suggests a requisite link between the physical condition of the environmental resources and some level of human appreciation of a benefit deriving from that physical condition. Beyond that important but limited sense, however, *use* in the use-conflict framework does not favor any particular orientation or viewpoint.[86] Indeed, federal natural-resource planning statutes employ *use* in just such an expansive sense, making clear that the term includes the benefits of, for example, preservation.[87]

The use-conflict framework focuses directly on environmental uses because uses drive human decisionmaking about such resources. Although there is some intrinsic appreciation of environmental resources, the value people attach to them is overwhelmingly instrumental. The physical condition of a resource is a necessary or preferred condition for something else that is valued directly: the use. A person's preference for a particular physical condition of the resource is derivative of, or incidental to, the person's use of the resource. Take the example of a river. Although some may appreciate the river intrinsically for its ecological health, most do not. Most benefits the river provides—source of drinking water, recreational site, conveyance of stormwater runoff, or receptacle for pollution— are only related to ecological health to varying extents and in varying ways.

Even users whose benefit depends on the aesthetic appreciation of an environmental resource are not directly valuing the ecological health of the resource. Almost every benefit that an environmental resource generates is mediated by an intervening activity that

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substance of environmental law need not be. *See* Kelly A. Parker, *Pragmatism and Environmental Thought*, *in* ENVIRONMENTAL PRAGMATISM 21, 33 (Andrew Light & Eric Katz eds., 1996) ("[H]uman experience, the human perspective on value, is the only thing we *know* as humans."); Ruhl, *supra* note 17, at 532 ("[A]ll environmental values—or all the environmental values that count—are those that derive from the human experience, about which humans converse, and which only humans measure."); Valentí Rull, *The Candid Approach*, 11 EMBO REP. 14, 16 (2010) ("In the end, all the reasons . . . for preserving biodiversity, whether commercial, sustainable, moral, ethical, or candid, are still anthropocentric because humans assess the value of nature on the basis of their material and cultural needs.").

    86.   The use-conflict framework includes, for example, so-called existence value, which is often distinguished from more anthropocentric values that are more readily associated with the idea of a use. *Cf. supra* note 82.

    87.   *See, e.g.*, Multiple-Use Sustained-Yield Act of 1960 § 2, 16 U.S.C. § 529 (2006) ("The establishment and maintenance of areas of wilderness are consistent with [the statute's principles of multiple use and sustained yield]."); Federal Land Policy and Management Act § 103(c), 43 U.S.C. § 1702(c) (2006) (defining "multiple use" to include "natural scenic, scientific and historical values").

complicates the benefit, so that its appreciation is not merely an appreciation of the resource's ecological health. A canoeist who enjoys canoeing a river may care about certain physical attributes of the river—whether it supports aquatic life, whether it emits a noxious odor—but this does not equate to a direct concern about the river's ecological health. Indeed, even users who consider themselves environmentalists may enjoy non-native plant and animal species or prefer to hike in an area cleared of native mountain lions or rattlesnakes. Yet in those situations in which users or decisionmakers value the ecological health of the resource more intrinsically, it still makes sense to analyze in terms of uses because doing so provides a common frame through which to analyze the competing demands on environmental resources. Indeed, even people who value ecological health directly, independent of human benefit, usually associate their preference for ecological health with certain patterns of human use or nonuse.

The concept of ecosystem services highlights the range of benefits from environmental resources that constitute a use for purposes of the use-conflict framework. *Ecosystem services* describes "the contributions that ecosystems make to human well-being."[88] The idea of ecosystem services serves as a vehicle for expanding our understanding of the benefits that people derive from ecosystems by pointing to underappreciated but valuable aspects of natural systems, such as the contribution of pollinating insects to agricultural crop production.[89]

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88. Barton H. Thompson, Jr., *Ecosystem Services & Natural Capital: Reconceiving Environmental Management*, 17 N.Y.U. ENVTL. L.J. 460, 464 (2008); *see also* Thomas C. Brown, John C. Bergstron & John B. Loomis, *Defining, Valuing, and Providing Ecosystem Goods and Services*, 47 NAT. RESOURCES J. 329, 334 (2007) ("We define ecosystem goods and services generally as the flows from an ecosystem that are of relatively immediate benefit to humans and occur naturally."); Brown et al., *supra*, at 334 n.12 (defining "naturally occurring goods and services" as "those that exist without human action"); Gretchen C. Daily, *Introduction: What Are Ecosystem Services?*, *in* NATURE'S SERVICES: SOCIETAL DEPENDENCE ON NATURAL ECOSYSTEMS 1, 3 (Gretchen C. Daily ed., 1997) ("*Ecosystem services* are the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfill human life."); Brendan Fisher, R. Kerry Turner & Paul Morling, *Defining and Classifying Ecosystem Services for Decision Making*, 68 ECOLOGICAL ECON. 643, 645 (2009) ("[E]cosystem services are the aspects of ecosystems utilized (actively or passively) to produce human well-being. The key points are that 1) services must be ecological phenomena and 2) that they do not have to be directly utilized." (emphasis omitted)).

89. Thompson, *supra* note 88, at 460, 466; *see also* Thomas Dietz, Amy Fitzgerald & Rachel Shwom, *Environmental Values*, 30 ANN. REV. ENVTL. RESOURCES 335, 339 (2005) ("The goods and services that flow from ecosystem functions are often taken for granted.").

Ecosystem services may benefit people either indirectly—as inputs in the production of other goods and services that more directly improve well-being—or directly.[90] Discussions of ecosystem services tend to focus on material goods and services, such as pollination or water purification.[91] But ecosystem services encompass nonphysical benefits as well.[92] After all, ecosystem services measure contributions to well-being, and an immaterial or nonconsumptive benefit from an ecosystem, such as appreciation of a prairie, is not necessarily any less of a contribution to well-being than a material benefit, such as a habitat for animals that people like to hunt. Any attribute of an ecosystem that people value, either directly or indirectly, is an ecosystem service.

The definition of ecosystem services thus essentially matches the use-conflict framework's definition of a use—that is, the means by which people derive value from the environment. Attempts by ecosystems-services analyses to catalog the full range of benefits that people derive from environmental resources can help to illustrate and inform the range of uses considered under the use-conflict framework.[93]

The concept of ecosystem services carries the implication that environmental decisionmaking should consider the effects of decision options on the streams of benefits derived from environmental resources—that is, ecosystem services. The use-conflict framework takes this idea further, positing that environmental decisions are best viewed as choices among options, each of which is associated with one

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90.   Brown et al., *supra* note 88, at 338. "[This] dichotomy between ecosystem goods and services of direct versus indirect utility is somewhat artificial in that there is a continuum from those ecosystem goods and services that require little or no other inputs to be of direct utility to humans to those that require a great deal." *Id.* at 338 n.20.

91.   *See* J.B. Ruhl & James Salzman, *The Law and Policy Beginnings of Ecosystem Services*, 22 J. LAND USE & ENVTL. L. 157, 157–58 (2007) (listing "purifying air and water, detoxifying and decomposing waste, renewing soil fertility, regulating climate, mitigating droughts and floods, controlling pests, and pollinating vegetation" as examples of ecosystem services); James Salzman, *Creating Markets for Ecosystem Services: Notes from the Field*, 80 N.Y.U. L. REV. 870, 882 (2005) (listing "water purification and pollination" as examples of ecosystem services).

92.   *See* Brown et al., *supra* note 88, at 333 (identifying aesthetics as an ecosystem good); Daily, *supra* note 88, at 3 (noting that ecosystem services "confer many intangible aesthetic and cultural benefits"); Fisher et al., *supra* note 88, at 645 (defining ecosystem services to include aspects of ecosystems that are used "actively or passively"); Thompson, *supra* note 88, at 465 (identifying intangible contributions to human well-being as a form of ecosystem service).

93.   *See, e.g.*, MILLENNIUM ECOSYSTEM ASSESSMENT, ECOSYSTEMS AND HUMAN WELL-BEING: SYNTHESIS (2005) (explaining the health benefits that ecosystems provide to human populations).

or more possible streams of benefits. Tradeoffs between conflicting uses shape the options available to lawmakers and, therefore, are an important animating force in environmental decisionmaking.

C. *Use Conflicts*

This fuller understanding of the concept of environmental uses within the use-conflict framework provides a foundation for exploring how environmental problems arise from conflicts among environmental uses. Uses conflict when they interfere with each other. This interference can arise from either or both of two circumstances. First, uses may require different physical conditions of an environmental resource. For example, some people may enjoy an area more if it has developed tourist accommodations, while others may enjoy it more if it is left undeveloped. Second, uses may affect— at least at some intensity of use—the physical character of the resource in ways that are detrimental to other uses of the resource. Thus, off-road vehicle use may change the physical character of an area so that it is less conducive to bird watching. A use may even conflict with itself, insofar as it leads to physical conditions that are detrimental to the continuing use of the resource—for example, fishing in a body of water may reduce its attractiveness for future fishing.

These are simple examples of bilateral conflicts, but actual patterns of use conflicts often are much more complex, involving a web of interrelationships among numerous uses. Of the many and varied uses of an environmental resource, some may interfere with each other inherently; some may interfere with each other only at certain levels or types of use; and some may be entirely compatible. Allowing surface mining in an area may preclude its use altogether for all-terrain vehicles and hiking, and vice versa, but all-terrain vehicle use and hiking may conflict with each other to some extent as well. And all three uses—surface mining, all-terrain vehicle use, and hiking—may conflict with the area's quality as a wildlife habitat, even if none of them renders the area entirely unfit for wildlife.

Use conflicts arise because most uses of environmental resources are not what economists call a *pure public good*. A *pure public good* means any number of simultaneous users may use the resource

cataracts—without interfering with anyone else's similar benefit. Nothing about one person's use of the stratospheric ozone layer to absorb ultraviolet radiation changes the ability of the ozone layer to protect anyone else. But the range of uses of environmental resources is such that even when there is not congestion among similar uses, there is potential congestion across differing uses of the resource. Thus, for example, interference among uses of the stratospheric ozone layer arises to the extent that people want to engage in other categories of use of the resource, such as using chemicals that deplete the ozone layer, thereby affecting the ozone layer's ability to absorb ultraviolet radiation.

Uses that interfere with each other thus result in rivalry and congestion, which can lead to use conflicts. Uses that do not interfere with each other—that is, uses that prefer the same physical conditions and that affect the physical condition of the resource in ways that are not detrimental to each other—are jointly derived and nonrival.[98] For example, the same physical attributes of a wetland that make it valuable for removing pollutants from water also may control stormwater flows, reducing flooding.[99] These jointly produced benefits create use synergies rather than use conflicts.

D. *Managing Use Conflicts*

If the use-conflict framework is correct in postulating that environmental problems are fundamentally use conflicts, then it follows that environmental lawmaking functions to manage use conflicts. The compatibility and incompatibility of uses define the options available to lawmakers to resolve use conflicts. Compatible uses may fall within the same decision option because there is no inherent tradeoff among compatible uses. Incompatible uses, however, necessarily differentiate options because their incompatibilities create tradeoffs. Options to manage an environmental resource variously advantage and disadvantage potential uses.

As an illustration, consider a meadow. Grazing cattle in the meadow reduces the quality of the meadow as a habitat for native wildlife and plants, affecting hunting, wildlife viewing, and other uses

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98.   *See* Fisher et al., *supra* note 88, at 648 (discussing how "ecosystem services can provide multiple benefits for human welfare").

99.   *Id.* at 649.

that benefit from native wildlife or plants.[100] Grazing's effects on other uses of the meadow create use conflicts, and decisions about how to manage the meadow advantage some uses and disadvantage others. Closing the meadow to cattle grazing, for example, advantages hunting and bird watching. Hunting and bird watching may have their own interferences with each other, however, and those interferences raise another management issue. Collectively, decisions about how to manage the meadow create a set of advantages and disadvantages that set the parameters for uses of the meadow. To the extent that those parameters do not dictate a particular balance among potential uses, it is up to nonlegal mechanisms—such as competition among users or sorting through social norms—to establish a balance among uses.

To say that environmental law manages use conflicts does not mean that it waits until uses of environmental resources are extant and in actual conflict before regulating. For decisionmaking purposes, the conflict occurs by virtue of the likelihood that potential uses, if they came into being, would conflict. It may take an actual conflict among uses to spur lawmakers to regulate, or lawmakers may take action in anticipation of a conflict. Sometimes environmental regulation may avoid an actual conflict altogether by regulating to prevent conflicts among uses before they arise. For the most part, however, environmental regulation allows some level of each conflicting use, and each use thereby incurs some impairment from its conflicting uses. This does not necessarily represent an inadequacy of environmental law but rather simply a balancing of conflicting uses. The Clean Air Act, for example, regulates air emissions so that use of the atmosphere for breathing and as a waste sink are both allowed and, at the same time, limited somewhat.[101] Breathing is limited by the presence of pollutants in the air that pose a health risk, and emissions are limited by regulation.

Given the difficulty in ascertaining a conflict over environmental uses, questions may arise as to whether uses are actually in conflict. If a factory is discharging into a river a substance that its operators believe is benign, but which some members of the public who get their drinking water from the river believe causes cancer, are the

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100. It may be, however, that only the hiker perceives the conflict. The rancher who grazes cattle in the meadow does not perceive a conflict with the hiker—unless the hiker bothers the cattle or tries to prevent the rancher from grazing the cattle in the meadow.

101. *See infra* note 112.

factory's discharges into the river an appropriate object of environmental regulation? There may be scientific uncertainty about the health effects of the substance, in which case there are normative questions to be answered about how much evidence should be required to prove or disprove a causal link and who should bear the burden of proof. But at some point, the perception of a conflict (or lack thereof) may persist, even though the facts unequivocally indicate otherwise. The public may continue to fear the factory's discharges, even if evidence overwhelmingly shows no basis for concern. Whether to treat such perceived conflicts as actual conflicts worth managing is, again, an important normative question.[102] The use-conflict framework thus highlights, but does not itself resolve, important normative questions about what counts as a conflict worth managing.

E. Illustrations

This Section illustrates the use-conflict framework by returning to the example cases from Part I, in which the concept of environmental harm left many important questions unanswered.[103] Applying the use-conflict framework to these examples shows how the use-conflict framework provides a superior analytical vantage point by which to understand environmental law.

Entergy Corp. v. Riverkeeper, Inc.[104]—the power plant cooling water intake systems case—illustrates a quandary in which all available options involve some form of environmental harm.[105] An environmental-harm framework is not very helpful in such situations because the concept of environmental harm does not provide a tool for comparing the tradeoffs among different harms. A use-conflict framework, by contrast, identifies the tradeoffs among decision options in terms of the impacts on uses of environmental resources. Lawmakers faced a choice between open-cycle cooling water systems

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102. *See, e.g.*, Robert A. Pollak, *Imagined Risks and Cost-Benefit Analysis*, 88 AM. ECON. REV. 376, 377 (1998) (explaining the differences in perception between the public and experts); Paul R. Portney, *Trouble in Happyville*, 11 J. POL'Y ANALYSIS & MGMT. 131, 131 (1992) (presenting a hypothetical problem about water quality and the differences in the perception of risk).

103. *See supra* Part I.B.2.

104. Entergy Corp. v. Riverkeeper, Inc., 129 S. Ct. 1498 (2009).

105. To say that all available options involve environmental harms is not to equate their environmental effects but rather to highlight the need for a framework that can differentiate among environmental effects in ways that reflect differences that matter to people's decisions.

with their consequences, including greater damage to aquatic life, and closed-cycle cooling water systems with their consequences, including increased air pollution. In the specific context of a particular decision, the lawmaking institution may have relatively free rein to address tradeoffs, or it may have its discretion constrained. In *Entergy*, for example, the issue before the Supreme Court was what normative judgments Congress had codified into the Clean Water Act to constrain the EPA's discretion in resolving the tradeoffs between the two control technologies.[106]

The debate over Clear Skies illustrates how descriptions of environmental issues in terms of environmental harm and environmental protection can mask ambiguous underlying baselines. Environmental harm and environmental protection both make comparative claims without a clear baseline—harmful as compared to what, or protective as compared to what? Analyzing Clear Skies in terms of use conflicts, on the other hand, facilitates the direct comparison of the various alternatives by focusing on the consequences each alternative would have for environmental uses. How will each option affect the industries that emit regulated pollutants into the air? How will each option affect the public health through air pollution? A use-conflict framework compares policy options to each other in terms of their relevant consequences, instead of comparing them to an implicit and ambiguous baseline. Making such comparisons hones in on specific factual issues that, although potentially clouded by scientific uncertainty, bypass the conceptual ambiguity of an environmental-harm approach.

Laidlaw—the mercury water-pollution case—presents a prime example of a situation in which the concept of environmental harm obscures more than it reveals. Recall that, although Laidlaw's permit violations did not result in any demonstrable health risk or environmental damage, nearby residents complained that their concerns about Laidlaw's discharges led them to curtail their recreational use of the river.[107] Justice Antonin Scalia's dissent latched onto the absence of "demonstrable harm to the environment" to argue that the plaintiffs lacked an injury that would give them

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    106. *Entergy*, 129 S. Ct. at 1505.

    107. Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc., 528 U.S. 167, 181–83 (2000); *id.* at 198 (Scalia, J., dissenting).

standing to sue.[108] The majority, however, held that the plaintiffs had demonstrated an injury because they changed their recreational, aesthetic, and economic uses of the North Tyger River based on their "reasonable" concern about the effects of Laidlaw's discharges on the water quality of the river.[109] The majority thus correctly understood that, conceptually, environmental resources like the North Tyger River function as a medium that creates relationships among a variety of human activities by virtue of the activities' mutual dependence on, or effects on, environmental resources. The majority's focus on the plaintiffs' uses of the North Tyger River, rather than on harm to the river, properly centered the inquiry on the link between the plaintiffs' claimed use impairment and the defendant's conduct—that is, the link between the plaintiffs' reduced enjoyment of the river and Laidlaw's discharges. Because the plaintiffs' reduced enjoyment resulted from a reasonable concern about the effects of Laidlaw's discharges, the plaintiffs had standing to sue Laidlaw.[110]

The Santa Cruz Island feral pigs dispute exemplifies a situation in which both sides of a debate claimed to be seeking to alleviate environmental harm—the National Park Service, by eradicating feral pigs; the Park Service's critics, by preventing what they considered to be a barbaric slaughter of wildlife.[111] The environmental-harm framework would ask which harms qualify as environmental, setting

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108. *See id.* at 198 (Scalia, J., dissenting). To be fair to Justice Scalia, he did acknowledge that harm to the plaintiffs, and not harm to the environment, was the ultimate focus of the standing analysis. *See id.* at 199. To some extent, then—although he did not articulate it as such—Justice Scalia's disagreement with the majority seems based on a judgment that the plaintiffs' concerns about Laidlaw's mercury discharges were unreasonable, and therefore that the plaintiffs' decisions to change their use of the North Tyger River lacked a causal nexus to Laidlaw's mercury discharges. On the other hand, however, Justice Scalia rejected the plaintiffs' standing allegations on the ground that "[o]ngoing 'concerns' about the environment" were akin to a mere "threat" of injury and did not suffice to constitute an Article III injury, *id.*, a point that focuses on environmental harm and seems to ignore the plaintiffs' allegations that their concerns led them to change their actual use of the river.

109. *Id.* at 183 (majority opinion).

110. This is not to say that the use-conflict framework would have required a finding that the plaintiffs had standing. A court might have concluded, consistent with the framework, that the plaintiffs' concern over Laidlaw's discharges was unreasonable and that their impaired use of the river therefore lacked a sufficient causal link to Laidlaw's violations. *Cf. supra* note 108.

111. *Compare* Griggs, *supra* note 77 (noting that the National Park Service "considered [the pigs] a threat to the endangered island fox and nine rare plants"), *and Restoring Santa Cruz Island*, *supra* note 79 (describing how eradication could lead to the island's "tremendous natural recovery"), *with Santa Cruz Island Pigs*, *supra* note 80 (characterizing the plan as an "atrocity" and questioning "how killing thousands of wild pigs and leaving their carcasses to rot was going to help anything").

up a contest between competing implicit baselines, each with its own hidden normative agenda. The use-conflict framework, however, focuses directly on the conflict between uses of the island, forcing each side to make a case for the normative superiority of its preferred use—that is, to argue why the island without feral pigs is better than the island with pigs, or vice versa.

These four examples demonstrate how the use-conflict framework yields a better understanding of environmental disputes than does an environmental-harm approach. The use-conflict framework, by focusing on human relationships to environmental uses, illuminates important aspects of environmental controversies that an environmental-harm approach misses by focusing on environmental resources themselves.

III. IMPLEMENTING THE USE-CONFLICT FRAMEWORK

The use-conflict framework is a way of conceptualizing environmental lawmaking. It is not a decision method, nor does it require a specific method of analysis. As the examples in the previous Section suggest, however, the framework has concrete implications for practical environmental lawmaking and environmental policy analysis. This Part explores those implications.

A. Structure of Environmental Lawmaking

Although the use-conflict framework is not a decision method, the framework does suggest that certain inquiries should play a major role in environmental lawmaking. Most importantly, environmental lawmaking should focus on identifying and resolving conflicts among environmental uses.

Environmental law manages conflicting uses of environmental resources in a variety of ways. Environmental laws sometimes manage uses directly—for example, a limit on the amount of a contaminant that a source can discharge into a waterway or a limit on the number of snowmobiles that can enter a national park each winter day. Or environmental laws may manage uses indirectly, through effects that eventually advantage or disadvantage a use—for example, by allowing construction of a new source of air pollution emissions that will increase the amount of ambient air pollution, thereby increasing the risk of asthma for those who breathe the polluted air. Either way, environmental laws are managing conflicts over uses of environmental resources.

In an ideal world, lawmakers could manage environmental resources comprehensively by identifying all potential uses, recognizing conflicts that may arise among such uses, deliberating about the values that should be applied to resolve those conflicts, and then applying those values to regulate environmental uses. But such comprehensive decisionmaking is well beyond the capabilities of individuals or institutions, especially considering the scale and complexity usually encountered in environmental problems. Thus, deliberate, comprehensive management of environmental resources is seldom, if ever, practical. Environmental lawmaking is piecemeal.[112]

But the reality of segmented lawmaking should not obscure the underlying truth that individual environmental-lawmaking decisions combine to collectively manage environmental resources. Participants in individual environmental decisions can ask how well their decision structures and processes reflect this truth, and, whenever possible, they should consider how a decision about an environmental resource interacts with other decisions that regulate uses of the resource. Keeping in mind this larger decision context should improve the

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    112.   As a step in this process of segmented decisionmaking, environmental lawmakers often make decisions in terms of environmental-quality indicators. For example, the Clean Air Act directs the EPA to establish National Ambient Air Quality Standards (NAAQS) for air pollutants; states must then develop implementation plans that will limit air pollution to levels below the standards. *See* 42 U.S.C. §§ 7409–7410 (2006). One could interpret environmental law's reliance on environmental quality indicators as supporting an environmental-harm framework. Arguably, environmental quality indicators reflect a focus on environmental quality, rather than environmental uses. But almost no one cares directly about environmental-quality indicators. Rather, lawmakers choose a particular environmental-quality standard as a rough proxy for facilitating certain uses that are preferred and consistent with the standard. NAAQS, for example, are set at levels that are thought to prevent particular health effects from air pollution. *See, e.g.*, National Ambient Air Quality Standards for Lead, 73 Fed. Reg. 66,964 (Nov. 12, 2008) (codified at 40 C.F.R. pts. 50, 51, 53, 58) (noting that the EPA made the NAAQS for lead more stringent to reduce the incidence of adverse neurological, cardiovascular, immunological, and other health impacts in children). Lawmakers choose to regulate an air pollutant at a certain level because that level allows some balancing of uses. Even when an environmental-quality standard appears to reflect a single use, it inevitably strikes a balance among uses in some respect. The NAAQS, for example, although set at levels "requisite to protect the public health" and "requisite to protect the public welfare" from the adverse effects of air pollution, 42 U.S.C. § 7409(b), are not set at levels that make air completely healthy to breathe, *see, e.g.*, National Ambient Air Quality Standards for Ozone, 73 Fed. Reg. 16,436, 16,478 (Mar. 27, 2008) (codified at 40 C.F.R. pts. 50, 58) (noting "evidence that some healthy individuals will experience lung function decrements and respiratory symptoms" even at levels below the NAAQS for ozone). Moreover, Congress has delayed deadlines for attaining compliance with the NAAQS for areas in which states are having great difficulty in reducing air pollution by sufficient magnitudes to meet the standards. *See, e.g.*, 42 U.S.C. § 7511 (classifying states and assigning dates for compliance based on the severity of air pollution).

responsiveness of environmental law to the values of the people whom lawmakers represent.

At bottom, a use-conflict framework for environmental lawmaking points toward two central sets of inquiries that should undergird efforts to improve the governance of environmental resources. The first inquiry is empirical and examines the relationship among the various possible uses of an environmental resource. How do these uses affect each other, creating conflicts and synergies that will shape the options available to lawmakers? The second inquiry is normative and asks how lawmakers should choose among uses when there are tradeoffs. What uses and what users of an environmental resource count for purposes of environmental law? In navigating tradeoffs among uses, how much weight should lawmakers accord to different uses?

These questions can never be answered definitively. As to the first inquiry, human understanding of the complex ecological processes that create relationships among uses will always be incomplete.[113] Indeed, it may be difficult enough to understand the many, varied uses of environmental resources—which often are not reflected in politics or markets—let alone the relationships among uses. As to the second inquiry, normative disagreement manifests the diversity of human values and is therefore unavoidable. The results of these inquiries thus will always be uncertain and indeterminate—but not unhelpful. Inquiring into the empirical and normative relationships among environmental uses, as the use-conflict framework does, at least focuses on the crux of environmental problems.

B. *Relationship to Analytical Methods*

Because the use-conflict framework does not prescribe a specific method of analysis or decision, it is not an alternative to particular analytical methods, such as cost-benefit analysis. The framework is, however, more compatible with some types of analytical methods than others. It works best with methods that share its core advantageous traits: highlighting the tradeoffs among policy options, reflecting the multidimensionality and complexity of environmental

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113. *See* Lazarus, *supra* note 42, at 747 (noting that "the sheer complexity of the natural environment" causes uncertainty about how human actions affect environmental resources).

problems, and encouraging or forcing explicit discussion of normative judgments.

Of the various analytical methods, cost-benefit analysis dominates regulatory debates.[114] Cost-benefit analysis appears, at first glance, similar to a use-conflict framework. Cost-benefit analysis involves inventorying the consequences of a decision option, monetizing the consequences, and then aggregating monetized values to produce a net value of the option.[115] Advocates of cost-benefit analysis generally contend that policymakers should select the policy option with the greatest net value.[116]

The use-conflict framework and cost-benefit analysis thus both frame policy decisions as choices among options, each of which has its own set of consequences. Both approaches also emphasize the tradeoffs that any decision option presents. For cost-benefit analysis, these tradeoffs are represented as the balance of costs and benefits. For the use-conflict framework, the tradeoffs are conceptualized as conflicting uses that the law must manage. Unlike cost-benefit analysis, however, the use-conflict framework does not necessarily prescribe quantifying and monetizing consequences. Rather, the use-conflict framework focuses on how a policy option affects environmental uses, which can be measured in numerous ways, not just in monetary terms. Indeed, effects on uses need not necessarily even be quantified to be helpful in assisting lawmaking decisions.

This difference between cost-benefit analysis and the use-conflict framework is crucial because it is cost-benefit analysis's insistence that policy effects "should be aligned along a single numerical metric. . . . that often forces the [cost-benefit] analyst to adopt methods of quantification and monetization that attract criticism."[117] In part, this is because the analysis that attaches quantities and values to potential outcomes inevitably requires normative judgments.[118]

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114. *See* Matthew D. Adler & Eric A. Posner, *Rethinking Cost-Benefit Analysis*, 109 YALE L.J. 165, 167 (1999) ("The reputation of cost-benefit analysis (CBA) among American academics has never been as poor as it is today, while its popularity among agencies in the United States government has never been greater.").

115. *See* Graham, *supra* note 61, at 413 (describing the Kaldor-Hicks test and cost-benefit analysis as methods of assessing risk).

116. *See id.* at 412 ("When multiple regulatory alternatives are compared, the preferred alternative is the one that maximizes net benefits . . . .").

117. Douglas A. Kysar, *It Might Have Been: Risk, Precaution and Opportunity Costs*, 22 J. LAND USE & ENVTL. L. 1, 17 (2006).

118. *See, e.g.*, Ackerman & Heinzerling, *supra* note 26, at 1576–80 ("A . . . fundamental flaw of cost-benefit analysis is that it is unable to deliver on the promise of more objective and more

Many environmental consequences are difficult to monetize because they are not traded in markets and thus are often excluded from cost-benefit analyses.[119] Thus, although theoretically comprehensive in scope, cost-benefit analysis often focuses on a relatively narrow range of consequences that economists can readily monetize. At a deeper level, even if cost-benefit analysis could encompass all consequences, any attempt to attach monetary values to policy consequences requires a value judgment, insofar as every valuation implicitly assumes a baseline.[120]

In short, the use-conflict framework organizes facts more realistically, and with fewer submerged normative judgments, than does cost-benefit analysis. The use-conflict framework shares with cost-benefit analysis the ideal of a comprehensive evaluation of the consequences of policy options, but it avoids the limitations and biases that result from monetization.

Other analytical methods are more compatible with the use-conflict framework. Professors Frank Ackerman and Lisa Heinzerling, strong critics of cost-benefit analysis, have proposed a nonmonetary assessment of the advantages and disadvantages of policy options, including a holistic deliberative process.[121] Professors Sidney Shapiro and Christopher Schroeder have proposed a pragmatic regulatory analysis that would be "problem-oriented, normative, discursive, and transparent," facilitating "open-ended qualitative evaluation of policy options that relies on discussion and logic to vet empirical information and to develop social ends and values."[122] Alternatively, life-cycle assessment aims to compile and evaluate all of the inputs, outputs, and potential impacts of a product

transparent decision making."); Amy Sinden, *In Defense of Absolutes: Combating the Politics of Power in Environmental Law*, 90 IOWA L. REV. 1405, 1455–56 (2005) ("[O]ne of the most troubling aspect[s] of CBA lies in its false promise of determinacy—its pretense of objectivity and scientific accuracy. When a number gets attached to something that is actually based on a host of controversial assumptions and approximations, value judgments become hidden behind a false veneer of scientific objectivity.").

119. *See* Ackerman & Heinzerling, *supra* note 26, at 1578–80 ("Cost-benefit studies of regulations . . . generally ignore other, nonquantified, health and environmental benefits. This raises a serious problem because many benefits of environmental programs—including the prevention of many nonfatal diseases and harms to the ecosystem—either have not been quantified or are not capable of being quantified at this time.").

120. *See generally* FARBER, *supra* note 1, at 99–101, 113 (describing methods of choosing baselines).

121. FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING 212–16 (2004).

122. Shapiro & Schroeder, *supra* note 26, at 473, 476.

or process throughout its life cycle, including every aspect of its production, delivery, use, and disposal.[123]

Like cost-benefit analysis and the use-conflict framework, each of these analytical approaches posits a comprehensive evaluation of policy consequences. Unlike cost-benefit analysis, but like the use-conflict framework, these approaches do not attempt to monetize consequences or to otherwise reduce them to a single numeric metric; therefore, they provide leeway to characterize consequences in a more multidimensional way than does cost-benefit analysis. But these analytical methods allow analysts or lawmakers to attach normative weight to consequences without focusing on the identification and management of conflicts among environmental uses. They therefore miss the insights that come from the use-conflict framework. Indeed, these analytical approaches, although in important ways consistent with the use-conflict framework, equally could be incorporated into an environmental-harm framework, with its attendant pathologies.[124] Thus, although these analytical approaches are generally compatible with the use-conflict framework, they do not include its core features and are not adequate substitutes for it.

IV. INSIGHTS INTO ENVIRONMENTAL LAW'S CHALLENGES

This Part elaborates on the use-conflict framework, explaining how the framework highlights some of the core challenges and conundrums of environmental lawmaking.

A. Identifying Uses and Use Conflicts

A simple scenario within the use-conflict framework would involve an environmental use that the person or persons who benefit from it understand and appreciate—for example, visitors to a state park who enjoy recreating in the park. Many environmental uses fit this pattern, but more complicated situations abound. Some uses—especially those in which the benefit is indirect—go unrecognized. Even beneficiaries who are aware of their environmental uses may

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123. DAVID F. CIAMBRONE, ENVIRONMENTAL LIFE CYCLE ANALYSIS 3, 6 (1997); D. ELCOCK, ARGONNE NAT'L LAB., NO. ANL/EVS/R-07/5, LIFE-CYCLE THINKING FOR THE OIL AND GAS EXPLORATION AND PRODUCTION INDUSTRY 11 (2007), *available at* http://www.evs.anl.gov/pub/doc/LCA_final_report.pdf; Stuart Ross & David Evans, *Use of Life Cycle Assessment in Environmental Management*, 29 ENVTL. MGMT. 132, 133 (2002) (discussing the steps of life-cycle assessment).

124. *See supra* Part I.B.

not recognize when those uses conflict with other uses. Other complications, such as the complexity of environmental relationships, arise as well, making it impossible for lawmakers ever to understand fully the use conflicts they are managing. These complications explain many of the most difficult obstacles to effective management of environmental resources.

First, people may or may not recognize their uses of environmental resources. This lack of recognition sometimes arises because the benefit a person ultimately derives from an environmental resource is far removed from the resource, because the benefit itself may be small, or both. A purchaser of fruit at a supermarket probably gives little or no thought to the environmental uses, such as pollination, that helped to grow the fruit.

Second, even direct and valuable environmental benefits may go unrecognized. People do not need to know, for example, that the stratospheric ozone layer absorbs ultraviolet radiation to benefit from the ozone layer's protection. They derive the benefit—that is, use the resource—regardless of whether they appreciate or even are aware of the benefit. And when someone enjoys environmental benefits more indirectly, such as an owner of property that is protected from flooding by upstream wetlands that absorb stormwater runoff, the benefits are even more likely to go unrecognized and unappreciated.

Third, the lack of recognition of the benefit of the environmental use is more than just taking the benefit for granted. Even the loss or impairment of the use may not alert the beneficiary to the use's existence. For example, if a depleted ozone layer stopped absorbing ultraviolet radiation, or bees stopped pollinating fruit trees, or impaired wetlands stopped absorbing stormwater runoff, depriving people of benefits they previously derived, those who are injured might not attribute their impairment to the use of an environmental resource. Nothing about the injury to their well-being—getting skin damage, having to pay more for fruit, or having their property flooded—necessarily indicates to them the source of the injury, which is the impairment of their use of an environmental resource.

Thus, because people are unaware of many of their uses of environmental resources, they may have little or no understanding of how, or how much, they benefit from environmental resources. In addition, even when people are aware of an environmental use, they may not recognize conflicts between their uses and other uses.

Even users who are aware of the benefits they derive from an environmental resource may not recognize when that use is impaired

or threatened. Property owners may know that upstream wetlands have protected their properties from flooding but may not realize when those wetlands become filled with sediment. Even users who realize their well-being has been reduced may not attribute that reduction to the impaired environmental benefit. For example, even after their properties are flooded, property owners still may not know of the loss of upstream wetlands, even though the loss of the upstream wetlands contributed to the flooding of their properties.

Moreover, even users who are aware of the benefit they derive from an environmental resource and are aware that the use is impaired may not trace their impaired use to the existence of conflicting uses; they may misattribute the cause of their impairment or not attribute it to any cause at all. Property owners may know generally that upstream wetlands have protected their properties from flooding, that some of those wetlands have been filled with sediment, and that their properties have flooded, but they may not realize that the filling of the wetlands contributed to the flooding. For example, they may think the storm that caused the flooding was unusually severe.

Third, when a use interferes with other uses, but is not impaired by the interference, the interfering user is particularly unlikely to recognize the conflict to which he contributes. If someone fills the upstream wetlands that contribute to the downstream flooding, there may not be any reason for that person to know of this effect of her actions. Although, as Professor Ronald Coase has noted, the use conflict is reciprocal in that it arises from both uses,[125] the conflict often is only perceived by the users whose uses are impaired and not by those who do the impairing.

Together, these complications that obscure uses and use conflicts create a context in which many members of society are largely unaware of their interests in environmental resources and thus are unlikely to assert their true interests. Individuals may not assert an interest at all on the mistaken assumption that they lack a significant interest, or they may participate unknowingly based on a misunderstanding of their actual uses of the environmental resource at issue.[126]

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125. *See infra* note 153 and accompanying text.

126. Consideration of environmental uses also becomes complicated when people derive satisfaction from someone else's use of an environmental resource—for example, a person's satisfaction from the expectation that Yosemite National Park will be preserved in a condition

Such conditions obviously complicate the task of effectively managing environmental resources. This is not to say that the beneficiaries of an environmental use are the only effective advocates for their use. Scientific experts, public officials, and policy advocates may represent and consider the interests of the unaware. But such representation has its problematic aspects, not the least of which is the difficulty in claiming to represent—and the lack of incentive to represent—the interests of people who are unaware of their interests. One of the goals of environmental law should therefore be to produce and disseminate information about the existence of potential conflicts, so that more people recognize their interests in an environmental problem. Evidence seems to indicate, for example, that the reporting of toxic chemical releases under the Toxic Release Inventory has led companies to reduce their emissions, even when they are not required by law to do so.[127]

The ecosystem-services concept,[128] in addition to helping clarify the range of uses associated with environmental resources, also advances the project of identifying relevant use conflicts. The idea that people are unaware of many of the benefits (uses) they derive from ecosystems underlies much of the work that has been done on ecosystem services. To the extent that people unknowingly derive benefits from ecosystems, those unappreciated benefits are unlikely to factor into ex ante environmental decisionmaking.

Ecosystem-services advocates strive to understand the depth and variety of means by which ecosystems contribute to well-being. This assists the efforts of the use-conflict framework, which seeks to highlight how environmental decisionmaking necessarily involves choices among conflicting patterns of uses of environmental resources. As environmental scientist Peter Kareiva and his coauthors

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that will allow his grandchildren to enjoy it. Whether and how such altruistic appreciation should be recognized and weighed in the lawmaking process poses interesting questions and additional complications.

127. *See, e.g.*, Michael P. Vandenbergh, *Climate Change: The China Problem*, 81 S. CAL. L. REV. 905, 944 (2008) ("Empirical studies have concluded that firms identified in TRI data releases as being among the highest emitters in their industrial sectors experienced an abnormal negative effect on firm stock value and subsequently reduced emissions more than those who were among the lowest emitters, even where emissions reductions were not mandated by law."); *see also* Vandenbergh, *supra* note 50, at 1107 ("Behavior change should occur if the individual is provided with the information necessary to enable rational decision-making. Individuals also have incentives to change behavior when they expect that their behavior will trigger the social sanctions that can be levied in close-knit group settings.").

128. *See supra* notes 88–93 and accompanying text.

recently noted in *Science*, "Because managers and researchers have tended to focus on impacts rather than tradeoffs, there has been no systematic examination of tradeoffs in a way that leads to a useful theory. . . . A more durable stewardship would manage tradeoffs among ecosystem services so that nature and people simultaneously thrive."[129] Completely informed environmental decisionmaking would require an understanding not just of the variety of ecosystem services derived from an environmental resource but also of the complex network of interrelationships—potential conflicts, as well as compatibilities—among those uses.[130]

But fully informed, rational use-conflict balancing is impossible. People incompletely understand how they use the environment and how their various uses interrelate, and they often understand even less how various policy options might affect the balance of their uses. This dualism is a core conundrum of environmental law. Lawmakers are managing that which they—and indeed society—only somewhat understand.

Thus, although the use-conflict framework rests on the understanding that environmental decisionmaking necessarily entails balancing among competing uses, the framework does not necessarily purport that use conflicts can be determined with accuracy or precision or that lawmaking institutions must determine use conflicts with accuracy or precision to make environmental law. Environmental decisionmaking effects a balance among conflicting uses of an environmental resource, but it often is difficult or impossible to determine ex ante—and perhaps even ex post—exactly what that balance will be and how it will affect people.

B. *The Role of Values*

Unlike an environmental-harm approach, which conceals normativity, a use-conflict framework exposes normativity by focusing on how decisionmakers choose among conflicting environmental uses. Normative arguments in environmental law make claims about the proper relationship among conflicting uses.

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129. Kareiva et al., *supra* note 32, at 1869.

130. *Cf.* James Salzman, *Valuing Ecosystem Services*, 24 ECOLOGY L.Q. 887, 901 (1997) ("As our understanding of ecological services develops . . . it well may be possible with a degree of certainty to establish connections between identifiable injuries and specific harms to services such as pollination or water retention.").

Values can represent the normative criteria by which people choose among conflicting uses.

Choices among potential uses of environmental resources occur at two different levels, both of which involve values. First, users apply values to choose among available options for using environmental resources. Second, lawmaking institutions apply values to choose among available options for managing uses of environmental resources. This Article is focused on understanding lawmaking, so it focuses on values as employed in that context. But, because the two levels are related, its exploration of values touches on individual values as well. Both sets of choices affect the balance of uses. Moreover, each set of choices affects the other. The preferences of users help to define the context in which lawmakers manage uses, and lawmaking choices establish parameters that help to shape the balance of uses.

This Section explores the values and interests at play in environmental decisionmaking at both the user level and the lawmaker level, their relationship to uses, and their role in environmental lawmaking.

Although *values* "is a complicated term involving myriad definitions,"[131] common to most definitions is the notion that values

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131. Terre Satterfield, Paul Slovic & Robin Gregory, *Narrative Valuation in a Policy Judgment Context*, 34 ECOLOGICAL ECON. 315, 316 (2000); *see also* Thomas C. Brown, *The Concept of Value in Resource Allocation*, 60 LAND ECON. 231, 231 (1984) (observing that "*value* has many meanings"); Dietz et al., *supra* note 89, at 336–37 (noting that the concept of values is utilized in several different disciplines, including philosophy, economics, sociology, social psychology, and political science, but that "these streams of research are not well integrated" and "as we move across the research traditions, the term values is used in somewhat different ways"). The question of how to define values has been widely discussed in academic literature. *See* WILLETT KEMPTON, JAMES S. BOSTDER & JENNIFER A. HARTLEY, ENVIRONMENTAL VALUES IN AMERICAN CULTURE 12 (1995) (defining values as "guiding principles of what is moral, desirable, or just"); MILTON ROKEACH, BELIEFS, ATTITUDES AND VALUES: A THEORY OF ORGANIZATION AND CHANGE 160 (1968) (defining values as "enduring belief[s] that a specific mode of conduct . . . is personally and socially preferable to alternative modes of conduct or end-states of existence"); Holly Doremus, *Shaping the Future: The Dialectic of Law and Environmental Values*, 37 U.C. DAVIS L. REV. 233, 241 (2003) ("By values, I mean the attitudes toward things and people that provide the underlying motivations for human behavior."); Shalom H. Schwartz & Wolfgang Bilsky, *Toward a Universal Psychological Structure of Human Values*, 53 J. PERSONALITY & SOC. PSYCHOL. 550, 551 (1987) ("[V]alues are (a) concepts or beliefs, (b) about desirable end states or behaviors, (c) that transcend specific situations, (d) guide selection or evaluation of behavior and events, and (e) are ordered by relative importance."); John Zaller, *Information, Values, and Opinion*, 85 AM. POL. SCI. REV. 1215, 1216 (1991) ("Values, as I use the term, refers to any relatively stable, individual-level predisposition to accept or reject particular types of arguments." (emphasis omitted)).

are the bases by which people make decisions.[132] In particular, values are often conceptualized as the criteria by which people choose among competing options when there are tradeoffs among the available options.[133] Because of their role in shaping action and decisions, values are "a fundamental building block of human behavior."[134] Values include not just material worth, but also the moral, ethical, social, and spiritual belief systems that influence human preferences.[135]

On this understanding, people's values drive their decisions about the appropriate uses of environmental resources. But the converse may hold true as well: environmental uses may play a formative role in shaping attitudes and values about which uses are appropriate.

First, uses affect attitudes about uses because experience generates information, and information shapes attitudes.[136] To form an attitude requires information, and one of the most important ways people receive information about an environmental resource is through using it. Moreover, the information people gain from the experience of using an environmental resource is not neutral among the various potential uses of the resource. Rather, using a resource tends to highlight the benefits of that use and how other uses may impair that use. The experience of fishing in a stream teaches the angler the benefits of fishing and informs her of the conditions that make a stream preferable for fishing; the experience of fishing is

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132. *E.g.*, Dietz et al., *supra* note 89, at 338, 340, 341, 356 (noting the common understanding that values influence how people make decisions); More et al., *supra* note 82, at 398 ("[T]he various conceptions of value share the common idea that values are guides to decision-making."); More et al., *supra* note 82, at 399 (stating that values "serve as criteria that people use to make judgments; that is, values specify the relationship between one thing and another").

133. Dietz et al., *supra* note 89, at 340–41, 356.

134. William G. Jacoby, *Value Choices and American Public Opinion*, 50 AM. J. POL. SCI. 706, 706–07 (2006).

135. Satterfield et al., *supra* note 131, at 316; *see also* Lockwood, *supra* note 82, at 9 ("Individual actors compose decisions from values that are a product of individual experience, predisposition and understanding, as shaped by a complex of social, cultural, environmental and economic influences. Such composition constitutes an act of integration . . . .").

136. *Attitudes* refers to a person's evaluative judgment about something. *See* P. Wesley Schultz, Chris Shriver, Jennifer J. Tabanico & Azar M. Khazian, *Implicit Connections with Nature*, 24 J. ENVTL. PSYCHOL. 31, 31 (2004); *see also* Dietz et al., *supra* note 89, at 346 ("Values differ from attitudes in that attitudes are positive or negative evaluations of something quite specific."); Paul C. Stern & Thomas Dietz, *The Value Basis of Environmental Concern*, 50 J. SOC. ISSUES 65, 67 (1994) ("[P]eople construct their attitudes on the basis of their expectations about how the attitude object (such as an environmental condition) affects the particular sets of people or things they value.").

unlikely to give the angler any information about the benefits of discharging industrial wastewater into streams. It may, however, give the angler information about how industrial wastewater impairs fishing. The more anglers fish in a stream, the more information will be available and distributed about the benefits of fishing in the stream and the ways in which other uses of the stream impair fishing. Uses may generate information about their negative consequences as well. For example, the problem of overfishing may become more apparent and more understood when overfishing actually has occurred. People's attitude about an environmental resource thus depends on what they know about it, and what people know about an environmental resource depends in significant part on how they use it.

Second, experience also shapes values. People value the familiar over the unfamiliar;[137] this is called the "mere exposure effect."[138] People also value what they have more than they value what they do not have; this is called the "loss aversion" or the "endowment effect."[139] The mere fact that people use a resource or have managed a resource in a certain way therefore leads them to prefer that use or management scheme over other options, independent of, or in addition to, any other reason for preferring that option.

If people's uses of environmental resources originated from preexisting autonomous preferences, then the effect of environmental uses on values would merely indicate that uses are a means by which values reinforce themselves and resist change. That is to say, it would indicate that people's values determine their uses, which in turn support their values. But factors other than values—for example, historical patterns and other constraints beyond people's individual control—also shape uses. Some use options, for example, may not have been technologically or economically viable in the past. Existing patterns of uses of environmental resources instill a bias in favor of

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137. *See, e.g.*, TRYGG ENGEN, ODOR SENSATION & MEMORY 111 (1991) (reporting that individuals prefer familiar odors over unfamiliar odors); PAUL SLOVIC, THE PERCEPTION OF RISK 141 (2000) (reporting that people prefer familiar risks over unfamiliar ones); David J. Hargreaves, *Verbal and Behavioral Responses to Familiar and Unfamiliar Music*, 6 CURRENT PSYCHOL. RES. & REVS. 323, 327 (1987) (finding that study subjects significantly favored familiar music over unfamiliar music).

138. Angela Y. Lee, *The Mere Exposure Effect: An Uncertainty Reduction Explanation Revisited*, 27 PERSONALITY & SOC. PSYCHOL. BULL. 1255, 1255 (2001).

139. Daniel Kahneman, Jack L. Knetsch & Richard H. Thaler, *Experimental Tests of the Endowment Effect and the Coase Theorem*, 98 J. POL. ECON. 1325, 1326 (1990).

existing uses, thereby exerting a potentially powerful influence on environmental decisionmaking that favors established uses. In short, uses may be creating values that support them. This effect is in addition to other forces that favor existing uses, such as investments—both social and economic—that have been made in existing uses.

Work in other fields supports the proposition that environmental uses affect values. Empirical psychological studies suggest that "objects . . . are valued because of the degree to which they are included within an individual's cognitive representation of self."[140] When people feel interconnected with nature, they tend to value nature.[141] Based on these results, psychologist P. Wesley Schultz has posited that engaging in activities that lead people to feel interconnected with nature tends to instill in them a concern for the environment, whereas engaging in activities that lead people to feel separated from nature likely reduces their concern for the environment.[142] In other words, how people use the environment likely affects how they value the environment, with their values supporting their uses. Similarly, economists Alan Randall and John Stoll maintain that prior use of an environmental resource in some form "seem[s] essential" to appreciation of the existence of the resource.[143] And philosopher Bryan Norton argues that some uses of environmental resources do not merely satisfy existing preferences but also help to shape values that will influence future decisions.[144]

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140.   P. Wesley Schultz, *The Structure of Environmental Concern: Concern for Self, Other People, and the Biosphere*, 21 J. ENVTL. PSYCH. 327, 336 (2001) [hereinafter Schultz, *Structure of Environmental Concern*]; *see also* P. Wesley Schultz, *Empathizing with Nature: The Effects of Perspective Taking on Concern for Environmental Issues*, 56 J. SOC. ISSUES 391, 401 (2000) [hereinafter Schultz, *Empathizing with Nature*] ("These objects are valued because they are included in a person's cognitive representation of self.").

141.   Schultz, *Structure of Environmental Concern*, *supra* note 140, at 336.

142.   Schultz, *Empathizing with Nature*, *supra* note 140, at 403.

143.   Randall & Stoll, *supra* note 82, at 268 (contending that "activities combining Q [an environmental resource] and X [a household's consumption of goods and services] in some previous time periods seem essential to the acquisition of the kinds of T [an activity production technology that permits the household to understand and appreciate the resource] which permit existence activities").

144.   *See* Andrew Brennan, *Moral Pluralism and the Environment*, 1 ENVTL. VALUES 15, 19–20 (1992) (citing BRYAN NORTON, WHY PRESERVE NATURAL VARIETY? (1987)) (discussing Norton's theory of demand values and transformative values). On the related question of whether outdoor contact increases one's likelihood of holding environmentalist values, anthropologists Willett Kempton, James Boster, and Jennifer Hartley note, "Only a few studies have investigated the relationship of outdoor contact with environmental sentiment, some finding a statistically significant but weak relationship." KEMPTON ET AL., *supra* note 131, at 56

The role of uses in shaping values may have important implications for normative questions. First, it provides a potential basis for questioning deference to existing values. To the extent that existing values merely reflect, for example, a preference for the familiar over the unfamiliar, they may be less normatively attractive than if existing values are presumed to reflect, for example, ethical or moral principles. Second, the role of uses in shaping values suggests that managing uses of environmental resources may entail, whether intentionally or not, managing values about uses of environmental resources as well. The complicated relationship between values and environmental uses is fertile ground for additional empirical and theoretical inquiry.

C. *Values Conflicts versus Use Conflicts*

Given the centrality of values to environmental decisionmaking, and, in particular, their role in shaping preferences for some uses over others, one could argue that environmental lawmaking should be conceptualized as conflicts of values rather than conflicts of uses. That is, one could argue for the adoption of a values-conflict framework that includes uses instead of a use-conflict framework that includes values. Indeed, some scholars who have theorized about the role of values in environmental decisions have contended that environmental controversies are fundamentally conflicts of values.[145] The problem with understanding environmental lawmaking in terms of values is that values, on their own and untethered to uses, suffer from similar conceptual difficulties to environmental harm as a basis for analyzing environmental lawmaking.

Just as not all environmental problems necessarily involve environmental harm, not all environmental problems can be reduced to conflicts over values. Some environmental disputes would dissipate if there were widespread values consensus. If all Americans shared a strong commitment to protecting endangered species, there would be less controversy over applications of the Endangered Species Act.

(citing Edward E. Langenau, Jr., R. Ben Peyton, Julie M. Wickham, Edward W. Caveney & David W. Johnston, *Attitudes Toward Oil and Gas Development Among Forest Recreationists*, 16 J. LEISURE RES. 161 (1984)). Moreover, these studies do not "distinguish which came first—the environmentalist leanings or the outdoor experience." *Id.*

    145. *See, e.g.*, EVERNDEN, *supra* note 31, at 5 (contending that debates between environmentalists and industrialists are "actually about *what constitutes a good life*"); Martin Nie, *Drivers of Natural Resource-Based Political Conflict*, 36 POL'Y SCI. 307, 307–08 (2003) (identifying "competing human values" as the core of political conflicts).

Many disputes, however, would not diminish. If everyone agreed that a watershed should be managed to maximize the extraction of irrigation water for agriculture, this consensus of values and attitudes would not necessarily alleviate controversies over which irrigators should get water, how much they should get, and when. Indeed, some environmental disputes would be exacerbated by a values consensus. If everyone favored snowmobiling in Yellowstone National Park, demand for a scarce resource would increase dramatically, intensifying use conflicts. Even if there were value consensus, competition among users of the resource would persist.

Uses even play an integral role in resolving issues that involve conflicting values and that initially might appear primarily to pose questions of values. Conflicting potential uses of environmental resources provide the medium for values conflicts in environmental decisionmaking. With environmental issues, for the most part, values conflict in a relevant way only insofar as they support conflicting uses of environmental resources. One person's (Polluter) preference for emitting pollutants into the air from his factory and another's (Breather) preference for breathing clean air result in a salient dispute only when their desired uses conflict—that is, when Polluter's emissions pollute the air Breather breathes or when regulations limiting emissions preclude Polluter from emitting as much pollution as he would like. There may be uncertainty, however, about whether or how Polluter's emissions affect the air Breather breathes, and many decisions about restricting air pollution are not made on a source-by-source basis, but rather for a group of sources. So Breather may be concerned about a decision to allow additional emissions of air pollutants even without clear evidence that the emissions will affect her breathing. But Breather is unlikely to oppose Polluter's emissions in the absence of any perceived consequence. Breather's values—and her attention—are triggered only upon perception of a risk of an impairment to a use of concern to her.[146]

Uses also provide a vital frame of reference by which to assess values. Values separated from uses can be nebulous. People may use broad, abstract values terminology to describe the normative

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146. This is not to suggest that a person could only be concerned about her own breathing and not that of others. Breather thus may vicariously benefit when others breathe clean air and may perceive a use conflict when Polluter's emissions affect others' breathing—not hers. But in the absence of a perceived risk to a use that concerns Breather, she is unlikely to care about Polluter's emissions.

concerns that guide their decisionmaking, but someone would need to apply the value to a use to understand what the value she claims motivates her actually means. Just as a stated goal of protecting the environment elides many of the complexities and complications of environmental lawmaking, advocating in terms of a broad value, such as promoting recreational access, provides little concrete insight about how one would propose to manage an environmental resource. Values are by no means unimportant, but they are best examined as they are channeled into weighing competing uses, rather than in the abstract.[147]

V. NEUTRAL BASELINES

This Article has argued that a use-conflict framework reveals some of the hidden normativity in environmental debates. The use-conflict framework describes environmental problems and environmental lawmaking conceptually in a manner that exposes normative premises and attempts to establish common ground across diverse normative perspectives. In other words, the use-conflict framework offers the possibility of a descriptive, analytical approach to understanding environmental lawmaking that avoids implicit baselines.

As Professors Jack Beermann and Joseph Singer have observed, "unstated baselines" that "define the normative starting points of legal analysis" pervade legal reasoning.[148] "Baselines embody important moral and political choices, but because they are starting points for analysis, they tend to suppress discussion of these choices."[149] "[W]hen the baselines are revealed, a clearer picture of

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147.   In addition, although people may think of values primarily as determinants of decisions about use, values and attitudes themselves appear to derive to some extent from uses. *See* discussion *supra* Part IV.B. People's uses of environmental resources are what give the resources meaning to them; uses reflect values, but they also shape values. Thus, in conceptualizing environmental decisionmaking, values do not stand in an unequivocally prior or superior position to uses.

148.   Jack M. Beermann & Joseph William Singer, *Baseline Questions in Legal Reasoning: The Example of Property in Jobs*, 23 GA. L. REV. 911, 915 (1989); *see also id.* at 933 ("Ideology and observation combine to form empirical baselines, or starting points, against which all situations are measured. Empirical observations are thus tied to a normative vision of the world. One's social vision, as embodied in empirical baselines, allows one, in the absence of clear evidence, to evaluate competing empirical claims. Ideology affects a person's judgment about which stories to believe.").

149.   *Id.* at 916.

the issues involved . . . is presented."[150] The use-conflict framework draws more explicit attention to baseline questions by describing environmental problems without hidden baselines. This stands in contrast to the environmental-harm approach, which submerges its normative assumptions in implicit baselines.[151]

In arguing for the advantages of stripping baselines from descriptive analyses in an effort to expose concealed normativity, the use-conflict framework for environmental law rests on foundations that Coase laid in *The Problem of Social Cost*.[152] In that classic work, Coase emphasized that land-use conflicts, in which the owner of one piece of property interferes with another property owner's use of her land, are "a problem of a reciprocal nature."[153] That is, to take an

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150. *Id.* at 915.

151. *See supra* Part I.B.2.

152. R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

153. *Id.* at 2. Having made the reciprocity observation, Coase went on to address its normative implications. From the perspective of welfare economics, the normative prescription for resolving a conflict between conflicting land uses should seek the efficient outcome, which maximizes the overall value of the land uses. *See id.* at 34 ("When an economist is comparing alternative social arrangements, the proper procedure is to compare the social product yielded by these different arrangements."); Lucian Arye Bebchuk, *Property Rights and Liability Rules: The Ex Ante View of the Cathedral*, 100 MICH. L. REV. 601, 609 (2001) ("The most efficient resolution of the conflicting-use problem is the outcome that would maximize total aggregate value . . . ."). Coase's most famous insight was that when transaction costs are low, private ordering should reach this optimal result because the affected parties should bargain to the highest-value outcome. *See* Coase, *supra* note 152, at 2–8; *see also id.* at 15 (noting that his analysis has assumed no transaction costs and that this is "a very unrealistic assumption"). This is the aspect of Coase's analysis that tends to draw the attention of scholars and that has become known as the Coase Theorem. *See, e.g.*, Nestor M. Davidson, *Property and Relative Status*, 107 MICH. L. REV. 757, 767 (2009) ("Where conflicts over resources arise, a corresponding preference is often found for legal rules that facilitate bargaining—again, with the presumption that clear property rights do just that."); Peter Lee, *Contracting to Preserve Open Science: Consideration-Based Regulation in Patent Law*, 58 EMORY L.J. 889, 971–72 (2009) ("Coase famously posited that in the absence of transaction costs, parties would freely negotiate over the disposition of resources to achieve efficient outcomes."); Robert J. Rhee, *Toward Procedural Optionality: Private Ordering of Public Adjudication*, 84 N.Y.U. L. REV. 514, 517 (2009) ("Coase argued that absent transaction costs, parties can efficiently rearrange rights irrespective of their initial assignment."); Matthew C. Stephenson, *The Price of Public Action: Constitutional Doctrine and the Judicial Manipulation of Legislative Enactment Costs*, 118 YALE L.J. 2, 28 n.53 (2008) ("[T]he Coasean argument [is] that an absolute property rule . . . would achieve [a socially efficient] result when transaction costs are zero, because open-market bargaining will always cause the property to be assigned to the party that places a higher value on it.").

But one need not agree with the normative argument to benefit from Coase's descriptive observations regarding the reciprocity of use conflicts. Indeed, Coase himself did not advocate private ordering as the solution for all land-use conflicts. To the contrary, he readily understood that a situation in which transaction costs are negligible is "a very unrealistic assumption." Coase, *supra* note 152, at 15. The operations necessary for private ordering to

example from an environmental case often linked to Coase,[154] a cement plant that emanates dirt, smoke, and vibrations may interfere with neighboring landowners' use of their properties, but if the landowners could force the cement plant to cease operation, that would interfere with the plant owners' use of their property.[155] As Coase summarized, "If we are to discuss the problem in terms of causation, both parties cause the damage."[156] Coase's observation of the reciprocity of causation in land-use conflicts is simple, but it differs dramatically from the traditional and intuitive conceptualization of such conflicts, in which people tend to ascribe responsibility for a land-use conflict to only one of the conflicting uses.

The benefit of Coase's reciprocity observation—and what makes it both analytically valuable and intuitively unsettling—is that it strips out the normative baseline that people almost invariably—and often subconsciously—presume into any situation.[157] By removing the

resolve conflicts "are often extremely costly, sufficiently costly at any rate to prevent many transactions." *Id.* Moreover, Coase recognized that even when private transactions could reach the efficient result, the efficient result was not necessarily the best result. Coase believed that "the choice between different social arrangements . . . should be carried out in broader terms than [merely comparing market value]," advocating instead "that the total effect of these arrangements in all spheres of life should be taken into account." *Id.* at 43; *see also id.* (opining that "problems of welfare economics must ultimately dissolve into a study of aesthetics and morals").

　　Although Coase recognized the problems that may arise by relying on private ordering to resolve use conflicts, he did not see governmental regulation as a panacea. Regulation is associated with its own set of costs and difficulties, leading Coase to conclude that "direct governmental regulation will not necessarily give better results than leaving the problem to be solved by the market or the firm." *Id.* at 18. Coase thus posed the problem as "one of choosing the appropriate social arrangement for dealing with the harmful effects" in a context in which "[a]ll solutions have costs." *Id.*

　154.　*See, e.g.*, Daniel A. Farber, *Parody Lost/Pragmatism Regained: The Ironic History of the Coase Theorem*, 83 VA. L. REV. 397, 400 (1997) (using the cement-plant example to explain the Coase Theorem); George P. Smith, II, *Re-validating the Doctrine of Anticipatory Nuisance*, 29 VT. L. REV. 687, 715–17 (2005) (same); Henry E. Smith, *Exclusion and Property Rules in the Law of Nuisance*, 90 VA. L. REV. 965, 1038–40 (2004) [hereinafter Smith, *Exclusion and Property Rules*] (same).

　155.　*E.g.*, Boomer v. Atl. Cement Co., 257 N.E.2d 870, 871–72 (N.Y. 1970).

　156.　Coase, *supra* note 152, at 13; *see also* Smith, *Exclusion and Property Rules*, *supra* note 154, at 966 ("[O]ne of the prime results of the economic analysis of law has been to cast doubt on ordinary notions of causation in favor of an economically more sophisticated view in which use conflicts exhibit symmetric causality . . . .").

　157.　*See* Pierre Schlag, *The Problem of Transaction Costs*, 62 S. CAL. L. REV. 1661, 1679 n.37 (1989) ("Coase's reciprocal view of causation impeaches the Pigouvian analysis by demonstrating that the Pigouvian approach improperly treats the externality 'victim' activity as a *fixed baseline*."); *cf.* Farber, *supra* note 71, at 686 (linking Coase to baseline neutrality); Louis

baseline or by revealing an implicit baseline, Coase's reciprocity observation exposes concealed normativity and expands the range of conceivable policy options. That is, when someone describes the cement plant case as one in which the cement plant is harming its neighbors, she assumes that the neighbors have a baseline right not to be interfered with by the cement plant, and her goal automatically becomes redressing the neighbors' injuries. The reciprocity observation—which illuminates that the choice is between allowing the cement plant to harm the neighbors or allowing the neighbors to harm the cement plant—expands the range of alternatives considered and forces justification of the choice among those alternatives. It may well be that the neighbors should have a right not to be interfered with by the cement plant and therefore have an injury that should be redressed, but that is a normative position that should be defended, rather than presumed. In other words, to the extent that one wants to use a baseline, it should be justified with a normative argument and not assumed into a putatively neutral factual description of the problem.[158]

To observe that conflicting uses, whether of land or of environmental resources, are reciprocal causes of a conflict is not to claim that they are otherwise symmetrical or that they are normatively equivalent.[159] Asymmetries abound in environmental law. A single pollution source may affect large numbers of people.[160] Activities at one location may have environmental effects over a

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Michael Seidman, *Points of Intersection: Discontinuities at the Junction of Criminal Law and the Regulatory State*, 7 J. CONTEMP. LEGAL ISSUES 97, 122–23 (1996) ("Instead of a fixed, formalist baseline . . . , Coase viewed baselines as up for grabs . . . .").

158. The use-conflict framework, in addition to incorporating Coase's reciprocity observation, takes into account the full range of relationships among uses, which are not limited to conflicts. Although use conflicts create problems, synergies and compatibilities among uses also play an important role in shaping human relationships with environmental resources and in defining options for managing those relationships. *See, e.g.*, *supra* notes 98–99 and accompanying text.

159. Dan Farber has argued that "treat[ing] entitlements as presumptively unallocated . . . implicitly assumes away any moral differences between the positions of the two sides by giving equal weight to their interests." Farber, *supra* note 71, at 686. In fact, however, a neutral baseline that treats entitlements as initially unallocated merely strips away normative *assumptions*—not all normative judgments—and requires any weighing of interests to be justified, rather than presumed.

160. *See, e.g.*, *NPL Site Narrative for Omaha Lead*, EPA, http://www.epa.gov/superfund/sites/npl/nar1660.htm (last updated Apr. 2003) (noting that approximately 65,615 residents of Omaha, Nebraska live on soil contaminated by lead, primarily from air emissions from a lead-smelting facility); *see also* National Priorities List for Uncontrolled Hazardous Waste Sites, 68 Fed. Reg. 23,077, 23,081 (Apr. 30, 2003) (including Omaha Lead in its list of sites).

broad area.[161] Environmental effects may be irreversible.[162] Some users are politically more powerful than others.[163] Some environmental benefits and costs may be reflected in the market, while others are not.[164] Certain users likely have more information about their uses than others do.[165]

Nothing about the use-conflict framework, and in particular about its observation that use conflicts are reciprocal, denies these asymmetries or their potential normative relevance. Indeed, if anything, the use-conflict framework, by focusing on use conflicts, highlights the asymmetries between conflicting uses. As for normative equivalence, observing that the law could allow the cement plant to harm the neighbors through its pollution or could allow the neighbors to harm the cement plant by shutting it down does not suggest that lawmakers or the people they represent should be indifferent between these two options. Rather, it merely suggests that they should be aware that they have a choice between the options and should be conscious of the criteria by which they make that choice.

Professor Farber has criticized neutral baselines in environmental analysis on two grounds. First, he contends that neutral baselines are not actually neutral. Any analysis, he claims,

161. *See, e.g.*, Arnold W. Reitze, Jr., *A Century of Air Pollution Control Law: What's Worked; What's Failed; What Might Work*, 21 ENVTL. L. 1549, 1597–98 (1991) (noting how tall smokestacks from industrial sources broadly disperse air pollution).

162. *See* LAZARUS, *supra* note 12, at 11 ("Such effects may take the form of the extinction of a species, the depletion of a fossil fuel resource, or the destruction of a unique land formation.").

163. *See* Sinden, *supra* note 118, at 1436–37 (2005) ("Environmental disputes involve asymmetries of power that consistently skew government decision making in favor of less stringent environmental regulation."); *see also* Howard Latin, *Regulatory Failure, Administrative Incentives and the New Clean Air Act*, 21 ENVTL. L. 1647, 1673 (1991) ("Industry representatives appear regularly in agency proceedings and can usually afford to offer detailed comments and criticisms on possible agency decisions, while environmental groups intervene on an intermittent basis and the unorganized public seldom participates at all.").

164. *See* Lisa Heinzerling, *Selling Pollution, Forcing Democracy*, 14 STAN. ENVTL. L.J. 300, 305 (1995) ("[T]he environmental consequences of unregulated market transactions are not reflected in price, and thus these consequences, and their effects on others, are not taken into account in market behavior.").

165. *See* Karkkainen, *supra* note 59, at 1414–15 ("Generally, industries know more about their own production technologies and cost curves, and are better positioned than regulatory agencies to determine the nature and extent of their waste byproducts (whether or not they actually pay attention to them) and to evaluate the cost, effectiveness, and unintended consequences of applying particular pollution-control technologies to their own industrial processes.").

"implicitly assumes a baseline."[166] "However we make environmental decisions, value choices are necessary."[167] Farber shows, for example, as other critics of cost-benefit analysis have, how attaching monetary values to policy consequences is a nonneutral value judgment in the guise of a neutral position, insofar as every valuation implicitly assumes an entitlement.[168]

Second, Farber argues that neutrality among values is not actually advantageous. Government should be able to take actions that favor particular values, Farber asserts, provided that the values "are reasonable (in light of our culture as a whole) and so long as the individual rights of dissenters are respected."[169] If the law did not allow government action in favor of such values, society would be deprived of many programs that most would agree provide social benefits.[170]

Farber may be correct in both of his criticisms of neutral baselines in the way he has applied them to prescriptions for environmental lawmaking. Indeed, his underlying contention that favoring some values over others is both necessary and beneficial is entirely consonant with the use-conflict framework, which acknowledges the central role of values in decisionmaking. But his criticisms of neutrality do not apply well—and are presumably not intended for—descriptive analytical frameworks. For descriptive analytical frameworks, neutrality—especially in the form of stripping normative baselines out of the analysis—is for the most part both possible and desirable.

Whereas decisions require values, describing a problem and the related available options does not necessarily require favoring one normative stance over another. Farber has argued that a neutral baseline "implicitly assumes away any moral differences between the positions of the two sides by giving equal weight to their interests."[171] This is a disadvantage for a normative framework—if nothing else, it

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166.   FARBER, *supra* note 1, at 99.

167.   *Id.* at 122.

168.   *See, e.g.*, *id.* at 99–101, 113 ("Under this standard, instead of asking what people would pay to get cleaner air, you ask what price they would demand before agreeing to accept air pollution.").

169.   *Id.* at 109.

170.   *See id.* at 109–10 ("The government need not be neutral between people holding these values and those who would prefer a sterile world with no organic life apart from humans and their agricultural inventory.").

171.   Farber, *supra* note 71, at 686.

invites the encroachment of submerged values. For a descriptive framework, however, adopting a value-inclusive analysis—that is, describing the decision context in a manner amenable to the broadest possible range of viewpoints—forces any proponent of an option to make its value advocacy explicit, thereby promoting constructive debate.

The use-conflict framework focuses on the empirical and normative relationships among environmental uses. Every policy option distributes advantages and disadvantages among environmental uses. The use-conflict framework accordingly calls for the proponents of a policy to justify its normative weighing of uses. In doing so, the framework acknowledges the potential validity of all uses, including those that the policy would impair. As Professors Beermann and Singer have noted, forcing normative questions out of hidden baselines and into explicit normative argument broadens the range of perspectives represented in the debate and facilitates thoughtful choices among those perspectives.[172]

It may seem that the use-conflict framework, which attempts to describe environmental law without favoring a particular normative perspective, conflicts with the longstanding argument that no analysis can be entirely value neutral.[173] More recently, cultural cognition theory has highlighted how, in many public policy debates, factual disagreements may be traceable to underlying differences in values.[174]

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172. Beerman & Singer, *supra* note 148, at 915; *see also id.* at 916 ("By identifying these baselines and by unpacking their contents, we hope to open up the discussion to explicit consideration of the suppressed moral and political questions underlying employment-at-will."); *id.* at 995 ("[W]e should make our moral arguments explicit and we should try to understand how our moral viewpoints shape our entire approach to problems."); *id.* ("Bringing competing baselines to the forefront of the analysis allows us to highlight the moral and political choices implicit in choices among competing rules. It therefore will help us make better decisions by clarifying the value choices involved in the decision.").

173. *See, e.g.*, JOHN FINNIS, NATURAL LAW AND NATURAL RIGHTS 17 (1980) ("[T]here is no escaping the theoretical requirement that a judgment of *significance* and *importance* must be made if theory is to be more than a vast rubbish heap of miscellaneous facts described in a multitude of incommensurable terminologies."); Leslie Green, *The Concept of Law Revisited*, 94 MICH. L. REV. 1687, 1713 (1996) ("[D]escribing is always done from the point of view of certain values and in that way expresses those values."); Talcott Parsons, *Introduction* to MAX WEBER, THE THEORY OF SOCIAL AND ECONOMIC ORGANIZATION 1, 11 (Talcott Parsons ed., 1947) (noting Max Weber's position that explanation required "a frame of reference which was inherently abstractive and selective with respect to the facts treated as relevant and their mode of statement").

174. *See, e.g.*, Dan M. Kahan & Donald Braman, *Cultural Cognition and Public Policy*, 24 YALE L. & POL'Y REV. 149, 150 (2006) ("[C]ulture is prior to facts in the cognitive sense that what citizens believe about the empirical consequences of those policies *derives* from their

Regardless of whether these arguments hold true in all contexts, they apply with great force to environmental lawmaking, in which uncertainties are pervasive and factual determinations inevitably require considerable amounts of judgment,[175] which is susceptible to influence from one's values.[176] Thus, to the extent that the use-conflict framework assumes the possibility of values-free descriptive analysis, it is incompatible with cultural cognition theory and other critiques of the value-fact dichotomy.

Despite its efforts toward neutrality among viewpoints, however, the use-conflict framework does not pretend that values can or should be stripped from policy discussions. Rather, the framework's objective is to expose and highlight normativity, so that a diversity of normative claims can be aired and debated fairly. Other analytical approaches channel the effects of environmental policy options into categories, such as environmental harm, that internalize implicit normative judgments about the effects' desirability.

The use-conflict framework, by contrast, is in several different ways inclusive and respectful of a broad range of interests and values. First, the framework's focus on environmental uses acknowledges the stake of anyone who purports to derive a benefit from an environmental resource. Second, the framework's precept that policy options should be evaluated in terms of how they advantage and disadvantage environmental uses further promotes inclusivity by not excluding or prejudging the normative weight that should attach to an interest. Finally, the use-conflict framework, by emphasizing the reciprocity of environmental-use conflicts and how environmental

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cultural worldviews. Based on a variety of overlapping psychological mechanisms, individuals accept or reject empirical claims about the consequences of controversial policies based on their vision of a good society."); *see also* Dan M. Kahan, *The Cognitively Illiberal State*, 60 STAN. L. REV. 115, 118–25 (2007) ("[T]o the extent that it is driven by affect, risk perception is necessarily conditioned by culture."); Dan M. Kahan, Paul Slovic, Donald Braman & John Gastil, *Fear of Democracy: A Cultural Evaluation of Sunstein on Risk*, 119 HARV. L. REV. 1071, 1083–88 (2006) (reviewing CASS R. SUNSTEIN, LAWS OF FEAR: BEYOND THE PRECAUTIONARY PRINCIPLE (2005)) ("The claim behind cultural cognition is that *culture is prior to facts* in societal disputes over risk.").

175. *See* Wendy E. Wagner, *Congress, Science, and Environmental Policy*, 1999 U. ILL. L. REV. 181, 184 ("Rather than shying away from scientific facts and figures in the development of environmental law as one might expect, Congress may often be relying *too* heavily on the scientific enterprise to guide its lawmaking in the area of environmental protection.").

176. *See* Kahan & Braman, *supra* note 174, at 164–65 ("The same psychological and social processes that induce individuals to form factual beliefs consistent with their cultural orientation will also prevent them from perceiving contrary empirical data to be credible.").

policies manage use conflicts by balancing conflicting environmental uses, simultaneously validates all interests.

CONCLUSION

The use-conflict framework postulates that environmental lawmaking is best understood in terms of the empirical and normative relationships among environmental uses. Unlike approaches that carry hidden normative baselines and thereby stunt thoughtful deliberation, the use-conflict framework's focus on relationships among uses of environmental resources establishes a neutral baseline that empowers meaningful debate among competing normative perspectives. It brings within its ambit the broadest range of considerations relevant to environmental problems. The use-conflict framework is a way of thinking systematically and analytically about environmental problems, and of promoting open dialogue about competing values without adopting or rejecting the precepts of any particular normative theory.