

# EXISTENCE VALUE AND FEDERAL PRESERVATION REGULATION

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*Some, perhaps many, Americans lose some sense of well-being simply by virtue of the loss of the existence of natural resources in states where they do not live. Unlike physical spillovers or losses in use, "existence values" are harmed when people value the existence of a natural resource intrinsically, so that the destruction of the resource in and of itself harms them. This Article develops a normative defense of federal preservation regulation premised on existence-value concerns, reasoning that such regulation has the potential to maximize aggregate social welfare just as much as regulation of other types of externalities, such as physical spillovers. This Article also responds to the objections of critics who reject existence values as a legitimate basis of federal regulation. The principal objection, that existence values are nonmeasurable, is inconsistent with the findings of contingent value surveys, used precisely to elicit and quantify non-use values in monetary terms, and more importantly, with the comparative measure of the magnitude of the existence-value benefits of natural resources and other conflicting interests that the federal political process itself provides. Critics also suggest that such regulation is in tension with the principles of respect for private property rights and of distributive justice among communities, but these principles do not present concerns that are uniquely applicable when existence values are the motivation for the regulation. Finally, this Article evaluates the implications for regulation premised on existence-value concerns of different approaches to Commerce Clause doctrine and standing requirements for citizen suit enforcement.*

## I. INTRODUCTION

The role of the federal government in preserving natural resources is now under serious challenge. A group of prolific legal scholars is currently disputing the need for a significant regime of federal preservation regulation.<sup>1</sup> In *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers* ("SWANCC"),<sup>2</sup> the United States Supreme Court recently suggested that a substantial portion of the federal program of wetlands protection under the Clean Water Act unconstitu-

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<sup>1</sup> See, e.g., Todd J. Zywicki, *Baptists?: The Political Economy of Environmental Interest Groups*, 53 CASE W. RES. L. REV. 315 (2002) (arguing that almost all of federal environmental regulation is motivated by "rent seeking"); Andrew P. Morriss, Bruce Yandle & Terry L. Anderson, *Principles for Water*, 15 TUL. ENVTL. L.J. 335 (2002) (arguing for the decentralization of environmental regulation in the United States); Jonathan H. Adler, *Free & Green: A New Approach to Environmental Protection*, 24 HARV. J.L. & PUB. POL'Y 653, 690-94 (2001) (advocating decentralization).

<sup>2</sup> 531 U.S. 159 (2001).

tionally infringes upon state authority to control local land use and development.<sup>3</sup> In recent dissents, two prominent lower federal court judges have argued that the Endangered Species Act (“ESA”), as implemented by the federal government, exceeds the constitutional bounds of permissible federal authority over land use.<sup>4</sup> The Supreme Court repeatedly has been asked to accept certiorari in cases challenging the constitutionality of the ESA’s application to a species located entirely within the boundaries of a single state.<sup>5</sup>

The challenge to federal preservation regulation builds on a cramped conception of environmental externalities. Conventional economic and political theory predicts that the states will underregulate the degradation or destruction of natural resources within their borders when some or all of the resulting adverse effects fall outside their borders, that is, upon out-of-staters. Academic critics of the federalization of environmental law agree with this conventional view at an abstract level, but, in their view, only the physical effects of the destruction of a natural resource on out-of-staters should count as an interstate externality that can justify federal intervention.<sup>6</sup> The federal courts may be moving toward an even narrower

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<sup>3</sup> The Court in *SWANCC* held that the Clean Water Act does not authorize federal regulation of so-called “isolated wetlands,” wetlands that are not adjacent to waters of the United States within the meaning of the Act, in part on the ground that federal regulation of such wetlands raises serious constitutional concerns. 531 U.S. at 174. For useful discussions of the implications of *SWANCC*, see William Funk, *The Court, the Clean Water Act, and the Constitution: SWANCC and Beyond*, 31 ENVTL. L. REP. (Envtl. L. Inst.) 10741 (2001) (arguing that “the implications of the decision’s statements regarding Congress’s power under the Commerce Clause could be potentially staggering for environmental law”); Robin Kundis Craig, *Beyond SWANCC: The New Federalism and Clean Water Act Jurisdiction*, 33 ENVTL. L. 113 (2003) (concluding that *SWANCC* could influence environmental law as a whole).

<sup>4</sup> See *Gibbs v. Babbitt*, 214 F.3d 483, 506–10 (4th Cir. 2000) (Luttig, J., dissenting); *Nat’l Ass’n of Home Builders v. Babbitt*, 130 F.3d 1041, 1060–67 (D.C. Cir. 1997) (Sentelle, J., dissenting). Judge Luttig reportedly is receiving consideration as a possible Supreme Court nominee. See Robin Toner & Neil A. Lewis, *Lobbying Starts As Groups Foresee Vacancy on Court*, N.Y. TIMES, June 8, 2003, § 1 at A1.

<sup>5</sup> See, e.g., *Bldg. Indus. Ass’n of Superior Cal. v. Norton*, 247 F.3d 1241 (D.C. Cir. 2001), cert. denied, 534 U.S. 1108 (2002); *Home Builders v. Babbitt*, 130 F.3d 1041 (D.C. Cir. 1997), cert. denied, 524 U.S. 937 (1998); *Gibbs*, 214 F.3d 483, cert. denied, 531 U.S. 1145 (2001).

<sup>6</sup> See, e.g., Henry N. Butler & Jonathan R. Macey, *Externalities and the Matching Principle: The Case for Reallocating Environmental Regulatory Authority*, 14 YALE L. & POL’Y REV. 23, 30–31 (1996) (rejecting “a type of psychological externality that arguably arises even when pollution does not physically cross state lines” as a possible basis for federal intervention); Jonathan H. Adler, *The Ducks Stop Here? The Environmental Challenge to Federalism*, 9 SUP. CT. ECON. REV. 205, 233 (2001) (concluding that only “tangible spillover effects” can justify federal intervention, and even then only tangible effects that “would be actionable at common law, such as emitting pollutants upstream”); Robert H. Nelson, *Does “Existence Value” Exist?—Environmental Economics Encroaches on Religion*, in THE INDEPENDENT REVIEW, VOL. I, 499, 500 (1997) (arguing that economics and political economy should return to historical practice of excluding from consideration things “that [are] never seen, touched or otherwise experienced—that [are] not consumed in any direct way . . .”); Donald J. Boudreaux, Roger E. Meiners & Todd J. Zywicki, *Talk Is Cheap: The Existence Value Fallacy*, 29 ENVTL L. 765, 802 (1999) (rejecting regulation

conception of what constitutes an environmental externality that can justify federal regulatory intervention—a conception in which the externality must entail interstate market effects in addition to interstate physical effects.

A significant set of the interstate effects of natural resource degradation and destruction, however, cannot plausibly be classified as either physical or market effects. Some, perhaps many, Americans lose some sense of well-being simply by virtue of the loss of the existence of wetlands, waterways, and other natural resources in states where they do not live.<sup>7</sup> Existence values (or more precisely, the desire to prevent the loss of existence values) provide a powerful positive account of how the federal political process, despite concerted opposition by well-organized business interests, has at times come to restrict the degradation of natural spaces that few out-of-state residents are likely ever to visit or otherwise use. Existence values also provide a strong normative account of why such restrictions are, from a societal vantage, presumptively welfare-maximizing. Indeed, as explained in Part III, federal regulation is more likely to be necessary to maximize welfare in the context of interstate losses in existence value than in the context of interstate physical effects, such as air or water pollution crossing state lines.

The principal claim of those who reject the use of existence values as a rationale for federal regulation is that existence values are nonmeasurable and hence unsuitable for consideration in public policy.<sup>8</sup> As explored in

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premised on “psychic” externalities). Richard Revesz, a highly sophisticated critic of the scope of federal pollution control regulation, acknowledges existence values as a basis for interstate externalities, but seems to suggest a narrow role for federal regulation premised on existence value concerns. His position, however, is not well-defined. See Richard L. Revesz, *The Race to the Bottom and Federal Environmental Regulation: A Response to Critics*, 82 MINN. L. REV. 535, 543 (1997) (very briefly addressing the issue of existence value as a justification for federal control of “exceptional natural resources such as national parks”).

<sup>7</sup> In the economics literature, the concept of existence value is generally attributed to a 1967 article published by John V. Krutilla. See John V. Krutilla, *Conservation Reconsidered*, 57 AM. ECON. REV. 777, 781 (1967) (arguing that “[t]here are many persons who obtain satisfaction from mere knowledge that part of wilderness North America remains even though they would be appalled by the prospect of being exposed to it”). In the legal academic literature, Richard Stewart addressed “psychic” spillovers and national moral values regarding the environment—concepts similar to existence value—in an important article written just as the current regime of federal environmental regulation was taking shape. See Richard B. Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196, 1215–19 (1977).

<sup>8</sup> See, e.g., Donald H. Rosenthal & Robert H. Nelson, *Why Existence Value Should Not Be Used in Cost-Benefit Analysis*, 11 J. POL’Y ANALYSIS & MGMT. 116, 117–18 (1992) (arguing that “even a single existence value is very difficult to measure accurately in practice” and that there is “little if any prospect” for the emergence of a “valid method” to measure existence values). The same critics who maintain that existence values are nonmeasurable also make a second, and inconsistent, empirical claim—that existence values are minimal or limited to a very few well-known resources. See Boudreaux et al., *supra* note 6, at 775 (asserting that “[w]hile some major landmarks such as the Grand Canyon or Yellowstone Park may have some amount of existence value, pure existence value divorced

Part IV below, this empirical objection is inconsistent with the findings of contingent value (“CV”) surveys in which respondents have been asked how much they would be willing to pay for the preservation of one or more natural resources. The CV surveys completed to date, although admittedly imperfect as measurement devices, suggest significant values for the preservation of a range of natural resources. More importantly, the federal political process itself provides a comparative measure of the magnitude of the existence-value benefits of natural preservation (on the one hand) and the magnitude of the competing economic benefits associated with the degradation or destruction of natural settings (on the other). If anything, given the core insights of public choice theory and the structural supports in the federal political process for industries whose economic interests often run counter to natural preservation (e.g., the mining, timber, and oil industries), we should expect the federal political process to understate significantly the comparative magnitude of the existence-value benefits of natural preservation.

The current literature also contains a non-empirical objection to existence values as a justification for federal regulation. The essence of this objection is that federal preservation regulation premised on existence value preferences is illegitimate because it violates the principles of respect for private property rights and distributive justice among communities. As explained in Part V below, these principles, at best, support the claim that all sorts of government regulation—and not just federal regulation aimed at preserving natural resources—is illegitimate from a particular (and highly contestable) point of view.

The normative defense of existence values and existence-value-driven regulation developed in Parts III–V provides a useful perspective from which to evaluate the current state of Commerce Clause doctrine. Commerce Clause doctrine has never formally recognized existence-value concerns as a basis for federal jurisdiction, and that is unlikely to change. However, certain doctrinal approaches to the Commerce Clause create room for regulation motivated by existence-value concerns, and others, such as the approach arguably endorsed by the majority in *SWANCC*, do not.<sup>9</sup> If one accepts that federal regulation premised on existence-value concerns is presumptively welfare maximizing, then one must accept that Commerce Clause tests that preclude such regulation carry a substantial social cost. The normative defense of existence-value regulation also has implications for the choice between approaches to standing that facilitate citizen enforcement of regulations premised on existence-value concerns, and approaches, such as

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from potential use value is likely to be trivial in amount in most cases. It is unrealistic to think that individuals would be willing to forgo more than a small amount of income or other use value for pure existence value”).

<sup>9</sup> See *infra* Part VI.A.

that endorsed by the majority in *Lujan v. Defenders of Wildlife*,<sup>10</sup> that impede such enforcement.<sup>11</sup>

In sum, the principal claim of this Article is that when the federal political process generates regulation to preserve the existence value Americans attach to natural resources, that regulation should be regarded as presumptively welfare-maximizing, presumptively constitutional, and presumptively subject to citizen enforcement by means of Congressionally authorized citizen suits.

## II. AN OVERVIEW OF “EXISTENCE VALUE”

This Part sets the stage for the normative defense of existence-value regulation developed in Parts III–V by providing an overview of the concept of existence value, and describes how losses in existence values differ from other losses that flow from the destruction of natural resources. This Part explores how existence values are revealed in concrete terms.

### A. *Existence-Value Losses and Other Effects of Natural Resource Destruction*

The destruction of a natural resource, such as a wetland<sup>12</sup> or endangered species habitat,<sup>13</sup> can have a variety of effects both within and outside

<sup>10</sup> 504 U.S. 555 (1992).

<sup>11</sup> See *infra* Part VI.B.

<sup>12</sup> Soon after the passage of the Clean Water Act, 33 U.S.C. §§ 1251–1387 (2000), the United States Army Corps of Engineers began the development of complex federal permitting requirements for the filling of wetlands, which are marshy areas that may or may not border flowing waterways. Ecologists and biologists rank preservation of wetlands as a high priority in part because wetlands provide habitat to a diverse array of flora and fauna and are integral to the health of larger hydrological systems, including lakes, rivers, and streams. See David E. Adelman & John H. Barton, *Environmental Regulation for Agriculture: Towards a Framework to Promote Sustainable Intensive Agriculture*, 21 STAN. ENVTL. L.J. 3, 27 (2002) (discussing the values of wetlands and noting that “[w]etlands are of particular ecological importance because they provide important habitat to about forty percent of the species listed as endangered or threatened under the ESA”). The wetlands permitting requirements allow the Corps to deny fill permits or grant the permits subject to conditions requiring the minimization of and/or mitigation of ecological harm. The Corps rarely denies a permit altogether, but the agency regularly requires project modifications and mitigation of environmental impacts. For helpful discussions of the development and operation of the federal wetlands program under Section 404 of the Clean Water Act, see ROBERT V. PERCIVAL ET AL., *ENVIRONMENTAL REGULATION* 673–93 (2003); Oliver A. Houck, *Hard Choices: The Analysis of Alternatives Under Section 404 of the Clean Water Act and Similar Environmental Laws*, 60 U. COLO. L. REV. 773, 777–98 (1989).

<sup>13</sup> Enacted in 1973, the Endangered Species Act (“ESA”) bars any federal action that will “jeopardize” the continued existence of an endangered or threatened species, and also prohibits any “taking”—roughly defined as harming—of any protected species on non-federal land. 16 U.S.C. §§ 1531–1533, 1536, 1538 (2000). The focus of the ESA as written is upon single species, considered one at a time in isolation. However, much of the regulatory activity under the ESA has focused upon “signature” species whose decline typifies diminishing—in a sense endangered—ecosystems or landscapes. Recent habitat conservation plan initiatives within the United States Department of Interior explicitly employ a

state boundaries. Because state boundaries have no necessary relation to any underlying environmental reality, interstate effects can dominate over intrastate effects. Consider, for example, the destruction of wetlands that filter wastes in an area at the border of two states. If the wetlands are located in State A and are adjacent to a river that flows from State A to State B, residents of State B could bear the brunt of the adverse effects.

Physical spillovers typically entail some pollutant or other substance crossing state boundaries and imposing risks of harm or actual harm on residents of a state. If a wetland in one state is destroyed, for example, people in another state could suffer from flooding or decreased water quality as a result of the hydrological connections between waters and wetlands in the two states. If the habitat of a mosquito-eating insect in one state is destroyed, and as a result the number of mosquitoes in both that *and* neighboring states skyrockets, the people in the neighboring states could suffer from increases in mosquito-borne illnesses.

The destruction of a natural resource can also adversely affect out-of-staters by depriving them of opportunities to visit or otherwise use the natural resource. Losses of use typically are manifested by a decrease in the number, length, or intensity of interstate trips to the site of the resource. For example, consider a wetland habitat that supports a breed of birds much prized by birdwatchers. Residents of a number of states come to the state where the habitat is located in order to watch the birds. The destruction of that habitat would end such interstate trips.

Unlike physical spillovers or losses in use, losses in existence value are not predicated on any change in the physical flow of living entities or non-living things across state borders. When people value the existence of an out-of-state resource intrinsically, then the destruction of the resource in and of itself harms them. That harm occurs even if the destruction of the resource never has and never will result in physical spillovers or losses in use.

A number of psychological processes may account for existence values in the natural resources context. People may value diverse habitats and diverse wildlife intrinsically because of moral or spiritual/religious convictions about nature and the inherent worth of non-human entities. Alternatively, they may derive psychic satisfaction, a sense of heightened well-being,<sup>14</sup> from the existence of certain natural resources even though they have no conscious moral or spiritual values regarding those resources. For

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multispecies, ecosystem-wide approach. See generally Bruce Babbitt, *Science: Opening the Next Chapter of Conservation History*, 267 *SCIENCE*, Mar. 31, 1995, at 1954; J. B. Ruhl, *Is the Endangered Species Act Eco-pragmatic?*, 87 *MINN. L. REV.* 885 (2003).

<sup>14</sup> A substantial tradition in welfare economics includes individual well-being—something that goes well beyond material welfare—within the meaning of welfare. See generally Lewis A. Kornhauser, *Preference, Well-Being, and Morality in Social Decisions*, 32 *J. LEGAL STUD.* 303 (2003) (discussing possible limits to what can be incorporated into the notion of welfare).

some people the knowledge that 200-year-old groves of trees remain standing and flourishing is a source of joy in and of itself.<sup>15</sup> For other people, moral convictions and psychic satisfaction may go hand in hand. One would assume, for example, that an individual who as a moral and spiritual matter values diversity in nature will have greater psychic satisfaction—greater well-being—if she knows that temperate rainforests have been saved and hundreds of species uniquely adapted to such rainforests have been preserved rather than allowed to become extinct.

An extensive set of literature analyzes the possible roots of existence values associated with natural resources, but motives are generally treated as irrelevant for the purpose of welfare economics.<sup>16</sup> One advantage of this approach is that it largely avoids the difficult tasks of assessing the roots of different preferences and assessing whether some preferences deserve more or less weight. We do not fully understand why people have existence values for natural resources, but neither do we fully understand why people have non-existence values for natural resources (or many other things). For example, although we can readily recognize that birdwatchers value wetlands so that they can view an array of birds, we have no theory as to why anyone values birdwatching in the first place. It is not obvious why the value derived by birdwatchers from bird watching, but not the value derived by non-birdwatchers from knowing that birds continue to exist, should “count” in the determination of public policy.

According to one critique of the use of existence-value preferences as a justification for preservation regulation, existence-value preferences regarding natural resources are more problematic than non-existence-value preferences because existence value preferences are, in Dworkinian terms,

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<sup>15</sup> Existence values may be present even for natural resources more common than endangered species and threatened landscapes, but as commentators have suggested and as patterns of preservation regulation indicate, existence values are likely to be more robust for “[n]atural features of the environment, with . . . unique, irreplaceable . . . character” than they are for “resources which are abundant, or for which many substitutes are available.” Tom Crowards, *Nonuse Values and the Environment: Economic and Ethical Motivations*, 6 ENVTL. VALUES 143, 145 (1997).

<sup>16</sup> Some commentators have suggested that, to the extent existence values are based on altruistic commitments to nature and/or wildlife, and not on a desire for psychic satisfaction *per se*, existence values cannot be considered as part of an aggregate welfare calculation. See, e.g., David S. Brookshire et al., *Existence Values and Normative Economics: Implications for Valuing Water Resources*, 22 WATER RESOURCES RES. 1509, 1514–15 (1986) (citing Amartya K. Sen, *Rational Fools: A Critique of the Behavioral Foundations of Economic Theory*, 6 PHIL. & PUB. AFF. 317, 327 (1977)); K. E. McConnell, *Does Altruism Undermine Existence Value?*, 22 J. ENVTL. ECON. & MGMT. 32 (1997). As an empirical matter, it is far from certain that one could ever accurately isolate the percentage of existence value valuations that is attributable to moral and spiritual values, as distinct from other psychological phenomena or concerns. Asking people why they value the existence of a resource sounds simple, but people are unlikely to have conscious access to all their reasons and, even if they do, they may not be able to translate their reasons into neat allocations among intelligible categories. As suggested above, my supposition is that moral and spiritual values and levels of psychic satisfaction are often linked, at least in the context of those who value preservation of natural resources.

“external preferences.” In Dworkin’s formulation, personal preferences are one’s preferences for one’s own enjoyment of goods or opportunities (such as the opportunity to observe birds); external preferences are one’s preferences for the assignment of goods and opportunities to others.<sup>17</sup> Dworkin expressed concern about the potential social harm from external preferences, focusing on such external preferences as preferences for the denial of rights and material support to religious and racial minorities. A number of commentators have argued that if existence value preferences regarding natural resources are allowed to “count” in the aggregate social welfare calculus, then there will be no way to justify the exclusion of white racists’ preference for the racial subordination of African Americans, or intolerant Christians’ preferences that only Christian religious buildings and services be permitted.<sup>18</sup> According to this argument, once we validate external preferences such as preferences for the existence of natural resources, we must validate all external preferences, no matter how repugnant.

The problem with this argument is that what makes certain types of preferences seem wrong to include in a social welfare calculus—or even to include in the ongoing discourse of what should be included in the social welfare calculus—is *not* that the preferences are personal or external. Consider, for example, someone who is not racist but who for instrumental reasons supports racial restrictions so that she can gain admission to medical school; here the preference is personal—medical school admission and training being a personal good and opportunity—but the preference is every bit as objectionable as the preference of the racist to keep African Americans out of medical school simply because she cannot abide the very existence of African American doctors. Personal preferences can be just as problematic as external ones. Conversely, there are many sorts of external preferences that seem wholly unobjectionable. Preferences on the part of adults for child-labor laws generally would be characterized as external preferences. Preferences for government efforts to protect ancient artworks in distant lands from looting and destruction also generally would be regarded as external preferences. Preferences on the part of Americans that societal resources be expended to curb racial genocide in Kosovo or Rwanda are external preferences. Preferences on the part of men for laws protecting women against violence also can be understood as a kind of external preference.

What makes certain kinds of preferences seem so objectionable as to be “off limits” in social and political discourse is that, with respect to these preferences, a firm societal consensus exists that the preferences are mor-

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<sup>17</sup> See RONALD DWORIN, *TAKING RIGHTS SERIOUSLY* 235–37 (1977).

<sup>18</sup> See, e.g., Boudreaux, et al., *supra* note 6, at 795 (arguing that “[t]here is no principled difference between an environmentalist who claims that just *knowing* of the existence of a species of trout substantially raises his utility and a bishop who claims that just knowing that people are forced to attend church on Sunday substantially raises his utility”).

ally wrong in and of themselves. There is a firm social consensus, reflected in our constitutional law, that racism and religious persecution are simply wrong. No such firm societal consensus exists with respect to preferences for the existence of natural resources. Existence value preferences relating to natural resources are, instead, one of many kinds of preferences that are the subject of ongoing societal debate, contention, and deliberation.

Another avenue for distinguishing racist and religious persecution preferences from preferences for the existence of natural resources is the principle of equal respect and regard for all persons. As Robert Goodin argues, the liberal democratic and utilitarian/social welfare traditions “respect people’s choices because we respect people, not the other way around.”<sup>19</sup> Preferences that embody disrespect for people—that deny the fundamental equality of a group of human beings—run counter to the premise of the liberal democratic and utilitarian/social welfare traditions. The expressive meaning of the preference for the existence of natural resources is not, as with racism or the suppression of religious minorities, the denial of the fundamental equality of any group.<sup>20</sup>

The destruction of a natural resource also can be conceptualized as producing a loss in option value, as opposed to existence value. An option refers to the entitlement to do or use something in the future; the current or present value of the option is known as option value. Option value is a function of a number of variables, notably when the option would be exercised if at all (the more remote the exercise, the less the present value), the gain from the exercise of the option assuming future circumstances make the exercise attractive, and the probability such future circumstances will obtain.

In theory, existence value and option value are entirely distinct: the value a wildlife biologist may place on the option to visit an arctic refuge to study caribou sometime in the future is analytically unrelated to the value the biologist may place on the continued existence of the caribou regardless of whether she ever could or would want to observe them in the future. In practice, however, option values and existence values tend to blur, especially when the options in question are what I will call amorphous options, that is, options that are open-ended as to time, the kind or value of future use, and the probability of future use.<sup>21</sup> People who perceive amor-

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<sup>19</sup> ROBERT E. GOODIN, *POLITICAL THEORY AND PUBLIC POLICY* 80 (1982). See also ANDREW KOPPELMAN, *ANTIDISCRIMINATION LAW AND SOCIAL EQUALITY* 18–24 (1996) (rejecting Dworkin’s external/personal preference distinction and arguing for the exclusion of racist preferences from social welfare calculations).

<sup>20</sup> See Howard F. Chang, *An Economic Analysis of Trade Measures to Protect the Global Environment*, 83 *GEO. L.J.* 2131, 2195–96 (1995) (arguing that preferences for the existence of extraterritorial natural resources—resources in other countries or in commons, such as dolphins located in international waters—are consistent with the Dworkinian principle of equal respect and regard).

<sup>21</sup> Some commentators have employed the term quasi-option to describe something similar to amorphous options. See Theodore Graham-Thomasi, *Quasi-Option Value*, in *THE HAND-*

phous-option value in natural resources also tend to perceive intrinsic value in such resources.<sup>22</sup> It may be impossible to distinguish the portion of such individuals' valuation of the preservation of a resource that is rooted in amorphous option value from the portion that is rooted in existence value.<sup>23</sup>

The arguments in the remainder of this Article are framed in terms of existence-value concerns but, as a logical matter, they apply with equal force whether one assumes that the relevant concerns are "pure" existence-value concerns, "pure" amorphous-option concerns, or (what most closely tracks reality) some mixture of existence-value and amorphous-option

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BOOK OF ENVIRONMENTAL ECONOMICS 594–614 (Daniel W. Bromley ed., 1995); Kenneth J. Arrow & Anthony C. Fisher, *Environmental Preservation, Uncertainty, and Irreversibility*, 88 Q. J. ECON. 312, 315 (1974). I prefer the label amorphous options because the term "quasi-option" does not convey what is distinctive about this category of options: their highly unspecified, open-ended nature.

<sup>22</sup> For example, the rhetoric of environmental groups in support of protecting wildlife and wilderness typically invokes both existence value and amorphous value concerns. See, e.g., Sierra Club, *Ecoregions—An Introduction: Protecting the "Web of Life,"* at <http://www.sierraclub.org/ecoregions/intro.asp> (last visited Mar. 21, 2004) (on file with the Harvard Environmental Law Review) ("Extinction is a tragedy in its own right. The intrinsic value of life itself—whatever form it may take—is reason enough to do all we can to save endangered species. But the loss of a species can have other, equally tragic consequences. In ways we may not even realize at the time, every such loss weakens the delicate 'web of life' which supports our planet's biosphere. This, in turn, magnifies the threat to the survival of the human species itself."); EarthJustice, *Wildlife*, at <http://www.earthjustice.org/program/wildlife/> (last visited Mar. 21, 2004) (on file with the Harvard Environmental Law Review) ("Miracle medicines are constantly being discovered in wild plants . . . . Other species have natural defenses against pests and blight, which may prove useful to agriculture . . . . There are less utilitarian reasons at work as well. It is not only folly to meddle fatally with the natural world, it is also wrong."); Natural Resources Defense Council, *California's Marine Life Protection Act: How Marine Reserves Will Help Preserve Ocean Life*, at <http://www.nrdc.org/wildlife/fish/acaleg.asp> (last visited Mar. 21, 2004) (on file with the Harvard Environmental Law Review) (arguing that wild areas, including the seas, "should be preserved for their intrinsic value" and because they "serve as a 'biological insurance policy' for future generations against our imperfect ability to project sustainable catch levels, our poor understanding of how fishing affects ecological relationships in the oceans.").

<sup>23</sup> The political rhetoric used by legislators to justify preservation regulation also blends amorphous option value and existence-value concerns. See, e.g., S. Rep. No. 95-874, reprinted in A LEGISLATIVE HISTORY OF THE ENDANGERED SPECIES ACT OF 1973, AS AMENDED IN 1976, 1977, 1978, 1979, AND 1980, 1044 (1982) (statement of Lowell Weicker, U.S. Senator from Connecticut) ("[I]n 1973, the Senate decisively endorsed the Endangered Species Act with the intent to mitigate man's effect on the destruction of life. We wisely recognized the importance of all creatures of the Earth and how much we have yet to learn of their potential worth. Notwithstanding the esthetic and spiritual values of such animals as the giant blue whale, and the practical medicinal benefits of minute plants, all life is part of an intricate, interdependent web. No single species, therefore, is unimportant."); *Endangered Species Act of 1973: Hearings Before the Subcommittee on Environment of the Committee on Commerce on S. 1592 and S. 1983*, 93d Cong. 114–15 (1973) (statement of Sen. Harrison A. Williams, U.S. Senator from New Jersey) ("[w]e might be able to do without many of the [creatures] which seem to be nonessential, but which give us pleasure, and make life more interesting and more complete. But that does not mean that we should . . . [O]ur wisdom is not yet extensive enough to grasp the full meaning of forever removing various forms of life from our environment. Every living thing has its own unique role in a given ecosystem. Whenever that delicate balance of nature is disturbed, for whatever reason and in whatever way, the entire fragile system begins to disintegrate").

concerns. The argument for regulatory intervention to address interstate losses in existence value developed in Part III applies equally well to interstate losses in amorphous-option value or losses of some mixture of existence and amorphous-option values. Parts IV–V’s analysis of the objections to regulation premised on existence values, and the rejoinders to those objections, similarly extend to regulation premised on amorphous-option concerns or regulation premised on a mixture of existence-value and amorphous-option concerns.

### B. *How Existence Values Are Revealed*

Existence-value preferences are revealed in two quite distinct forms: in contingent value surveys, used precisely to elicit and quantify non-use values in monetary terms,<sup>24</sup> and in political activism and outcomes. Two prominent examples of federal political outcomes that seem to reflect existence-value concerns are the federal wetlands program and the federal endangered species program. These programs are justified only in part by concerns regarding losses of use.<sup>25</sup> Duck hunters, fishermen and other outdoor enthusiasts support federal wetlands preservation, but they form only one piece of the political coalition in support of federal wetlands regulation.<sup>26</sup> The ESA commands strong (and within certain segments of the population, intense) political support despite the fact that the prospect for human use or tangible benefits from any particular protected species is remote. Similarly, federal governmental actions to protect wilderness areas on federal lands appear to be based on existence-value concerns. The prohibitions against drilling, mining and other extractive activities on remote lands in Alaska and Utah—lands that are unlikely to be the site of significant recreational use any time in the foreseeable future—cannot be attributed to concerns regarding loss of recreational use.<sup>27</sup>

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<sup>24</sup> The significance of CV surveys as a means of measuring existence values is addressed at length in Part IV, *infra*.

<sup>25</sup> See Daniel A. Farber, *Politics and Procedure in Environmental Law*, 8 J. LAW, ECON. & ORGANIZ. 59, 64 (1992) (arguing that environmental statutes cannot be explained as primarily an effort to “serve the interests of upper-middle-class backpackers”).

<sup>26</sup> For example, the lead “public interest” amici brief on behalf of the lawfulness of the Corps’s wetlands regulations at issue in *U.S. v. Riverside Bayview Homes, Inc.*, 474 U.S. 121 (1985), was submitted by a coalition of environmental groups known for their commitment to the intrinsic value of wildlife and wilderness, such as the National Wildlife Federation, and recreational groups, such as Bass Anglers Sportsman Society. See generally Brief of Amici Curiae National Wildlife Federation et al., *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121 (1985) (No. 84-701).

<sup>27</sup> On the intense debate regarding wilderness designation in Utah and elsewhere, see *Gale Norton Rouses Congress*, N.Y. TIMES, June 21, 2003, at A26; *Interior Dept. Wants To Limit Protected Lands; Wilderness Review Suspension Could Open 3 Million Utah Acres to Development*, WASH. POST, Apr. 13, 2003, at A12; H. Michael Anderson & Alike Moncrief, *America’s Unprotected Wilderness*, 76 DENV. U. L. REV. 413 (1999) (examining the background and legal framework for wilderness designations and protection of roadless areas on federal land). On the debate regarding drilling in the Arctic National Wildlife Refuge, a

One notable strand in “public choice” scholarship involves the ferreting out of anti-competitive, essentially commercial or economic motivations behind ostensibly “public interest” legislation and regulation, but this strand of scholarship has not had much to say about federal regulation directed at the preservation of natural resources and ostensibly premised (in part at least) on existence-value concerns.<sup>28</sup> The absence of such accounts—even highly speculative accounts—is all the more notable because a number of academics have devoted considerable energy to positing hidden motives that might explain environmental and land use law in other contexts (including interfirm competition in the context of pollution control/industrial source regulation,<sup>29</sup> interstate competition in the context of pollution con-

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place from which physical spillovers are extraordinarily unlikely and which very few Americans could even conceive of visiting, see, for example, David Firestone, *Drilling in Alaska, a Priority for Bush, Fails in the Senate*, N.Y. TIMES, Mar. 20, 2003, at A29 (noting that the debate about oil drilling was “unusually passionate and caustic” with opponents of drilling arguing that the refuge “would be irreparably damaged by the search for oil”); Helen Dewar, *Senators Reject Call for Drilling in Alaska: Bush Defeated on Key Issue by Slim Margin*, WASH. POST, Mar. 20, 2003, at A3 (explaining that “[t]he fight over drilling . . . on Alaska’s northern coast has raged for years, becoming one of the most contentious issues in the sometimes-fierce battles between energy and environmental forces”).

<sup>28</sup> The only anecdote I could locate in the academic and popular literature suggesting that interfirm competition may underlie federal preservation regulation relates to the Weyerhaeuser Company and the possible benefits it and a few other large timber companies may have derived from timber restrictions on old-growth forest in the Pacific Northwest. See Todd J. Zywicki, *Environmental Externalities and Political Externalities: The Political Economy of Environmental Regulation and Reform*, 73 TUL. L. REV. 845, 873–74 (1999); Dean Lueck, *The Law and Politics of Federal Wildlife Preservation*, in POLITICAL ENVIRONMENTALISM: GOING BEHIND THE GREEN CURTAIN 61, 105–07 (Terry L. Anderson ed., 2000). Weyerhaeuser’s private land holdings in the Pacific Northwest are home to a lower concentration of old growth forest than is present on nearby federal lands. The initial restrictions on old-growth harvesting on federal land may have boosted the value of Weyerhaeuser’s private land holdings, but there is no evidence (in the public domain at least) that Weyerhaeuser supported the listing of the spotted owl as an endangered species. The restrictions on the harvesting of timber on federal land harmed Weyerhaeuser’s lucrative business of acting as a broker/exporter of unprocessed logs harvested on federal land. See Dylan Rivera, *Small Mills Step Up*, PORTLAND OREGONIAN, May 12, 2003, at B1. Most importantly, the restrictions on harvesting practices on federal land were soon followed by restrictions (albeit negotiated rather than unilaterally imposed restrictions) on harvesting on private land, including over 600,000 acres of Weyerhaeuser’s private land holdings in the Pacific Northwest and hundreds of thousands of acres owned by other companies. See JAMES PIPKIN, OFFICE OF POLICY ANALYSIS OF THE U.S. DEPT. OF INTERIOR, THE NORTHWEST FOREST PLAN REVISITED (1998), available at [http://www.reo.gov/library/reports/NFP\\_revisited.htm](http://www.reo.gov/library/reports/NFP_revisited.htm) (last visited Mar. 21, 2004). During both the 1996 federal election cycle, when Bill Clinton ran for re-election, and the 2000 federal election cycle, when Al Gore ran for election as president, Weyerhaeuser did not act like a firm that was grateful to the Clinton Administration for covertly conferring rents on the company by means of environmental regulation: Weyerhaeuser channeled almost all its campaign contributions in both election cycles to Republican candidates and the Republican party (92% in the 1996 cycle, 89% in the 2000 cycle). See The Center for Responsive Politics, at <http://www.opensecrets.org/> (last visited Mar. 21, 2004) (on file with the Harvard Environmental Law Review).

<sup>29</sup> Regarding federal pollution control regulation aimed at industrial sources of pollution, the basic claim made in the public choice literature is that such regulation may be understood as an effort by larger, established firms to secure a competitive advantage in the marketplace. Pollution control regulation, it is argued, favors larger, established firms in

trol/industrial source regulation,<sup>30</sup> and homeowners' covert efforts to boost their property values through local environmental, open-space regulation<sup>31</sup>).

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two ways: (1) such regulation invariably grandfathers existing sources from the strictest variant of any new requirements (as in the power plant example discussed above), and (2) such regulation imposes certain fixed costs that, for larger facilities and firms, represent a lower percentage of total costs and hence a lesser burden than they do for smaller facilities and firms. See Richard L. Revesz, *Federalism and Environmental Regulation: A Public Choice Analysis*, 115 HARV. L. REV. 553, 572–75 (2001) (summarizing public choice literature). See also Bruce Yandle, *Public Choice and the Environment: From the Frying Pan To the Fire*, in POLITICAL ENVIRONMENTALISM: GOING BEHIND THE GREEN CURTAIN, *supra* note 28, at 31–60; Jonathan H. Adler, *Clean Politics, Dirty Profits: Rent-Seeking Behind the Green Curtain*, in POLITICAL ENVIRONMENTALISM: GOING BEHIND THE GREEN CURTAIN, *supra* note 28, at 1–30. The reasoning of the interfirm competition account of pollution control regulation cannot be extended to natural preservation regulation. Natural preservation regulation such as the federal ESA does not typically grandfather existing firms or existing operations. A firm may or may not be prohibited from filling ecologically sensitive wetlands under current federal regulations and practice, but that outcome does not depend on whether the firm has been filling wetlands for a long time. Nor does preservation regulation generally have any obvious built-in bias in favor of large firms relative to small ones.

<sup>30</sup> In the standard race-to-the-bottom account of federal pollution control regulation, firms pit states against one another by threatening to leave or not locate in any state that does not better the other states in regulatory laxity. Federal regulation can lessen or even eliminate the race-to-the-bottom. With the protection of specific federal pollution control requirements, 3M (for example) has no incentive to threaten to leave Minnesota for Georgia because the same basic standards, the same basic technologies—federal standards, federally dictated technologies—would apply in Georgia. Challenging the conventional reasoning that races-to-the-bottom are “bad things” to be avoided, Revesz has argued that the adoption of federal law at the behest of certain states that want tough pollution control standards but do not want to risk losing firms (and hence jobs) is, in effect, a denial to the states that care less about pollution of a competitive advantage to which they should be entitled. See generally Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the “Race-to-the-Bottom” Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210 (1992). As Revesz stresses, we typically regard competition as a healthy phenomenon that leads to welfare maximization. *Id.* at 1211–12. Revesz’s normative critique of federal pollution control laws, even if accepted as persuasive, does not seem to have much relevance to the context of federal preservation regulation driven by existence value concerns and focused largely on land use. Most of the states whose members of Congress oppose drilling in the arctic wilderness have no capacity to attract oil exploration; there is no oil to be found in Massachusetts. There is no evidence that the states whose elected officials have supported federal regulation of isolated wetlands such as prairie potholes are responding to any particular, organized or organizable group of firms threatening to leave or to avoid locating in the state unless unrestricted development of isolated wetlands is permitted.

<sup>31</sup> A very common argument against local open-space zoning is that it represents an effort on the part of people who have already built houses to maintain or raise the value of their properties by restricting the overall pool of land available for future development. See WILLIAM A. FISCHER, *REGULATORY TAKINGS: LAW, ECONOMICS, AND POLITICS* 220–23 (1995) (discussing evidence that such zoning raises housing prices). One might imagine a similar argument being made against federal preservation regulation—that is, that federal preservation laws are illegitimate efforts to boost the value of current owners’ property holdings by removing some open land from the pool of land available for development. Many supporters of federal preservation regulation, however, live hundreds or thousands of miles from proposed or current sites of such regulation. In the case of the Alaska wilderness, *all* the Congressional supporters of a continued bar on drilling live hundreds or thousands of miles away. It is probably fair to say that the overwhelming majority of the supporters of

### III. THE WELFARE MAXIMIZATION ARGUMENT FOR EXISTENCE-VALUE REGULATION

Federal preservation regulation premised on existence-value concerns has the potential to maximize aggregate social welfare, and can be justified on that basis. In conventional economics, regulation is conceptualized as a welfare-maximizing solution to externalities under certain circumstances. As a logical matter, this conceptualization should apply as much to losses in existence value as to physical spillovers. Indeed, as discussed below, regulation might be an even more attractive solution, from an economic efficiency perspective, for addressing losses in existence values than it is for addressing physical spillovers.

As a preliminary matter, it may be helpful to review the propositions that are the basis of the standard economic account as to when regulatory intervention to address externalities maximizes welfare. First, when firms produce costs that are not reflected in the price of their products, they will tend to ignore those costs in setting production levels and choosing production processes. To borrow from a famous case, *Boomer v. Atlantic Cement Co.*,<sup>32</sup> the owners of a cement factory that produces noise and smoke are not likely to be concerned about the nuisance costs borne by the neighbors since those costs do not affect the production costs of the cement.

Second, in assessing which result produces the greatest aggregate welfare, the relevant question is not only whether the cost bearers (in our example, the neighbors) lose more utility from the activity as currently conducted (making cement with noise and smoke) than the cost generators (the factory's owners) gain from that activity, but also which actor could most cheaply "avoid" the problematic aspects of the activity (the noise and smoke and their detrimental effects). One would want to know how much it would cost the factory to make cement without smoke and noise (if that is possible), and how much it would cost the neighbors to avoid the detrimental effects of smoke and noise, either by moving or by engaging in self-protective measures such as better air conditioning or protective eye gear.

Third, in the presence of high transaction costs associated with bargaining among cost bearers (the neighbors), among cost generators (the factory owners), and/or between cost generators and cost bearers, we cannot

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the adoption of the migratory bird rule protecting isolated wetlands or the Endangered Species Act restriction on old-growth harvests do not own property bordering prairie pot-holes or other isolated wetlands or old-growth forest. The potential for a blending of existence value and home-value concerns in federal resource conservation disputes is likely to increase, however, as "sprawl" accelerates, especially in the West and South. See Audrey Hudson, *Plan to Set Aside Land in Arizona for Owls Slammed; Ranchers, Builders Hit Project*, WASH. TIMES, Dec. 15, 2002 at A2 (noting that, with the rise of sprawl, the physical distance between developed areas and endangered species habitat is diminishing); Eddie Nickens, *Paved Over and Pushed Out*, 39 NAT'L WILDLIFE, Aug./Sept. 2001 at 36.

<sup>32</sup> 257 N.E.2d 870 (N.Y. 1970).

expect bargaining to result in the allocation of entitlements that is welfare-maximizing.<sup>33</sup> Consequently, government regulation at the state or local level may be necessary to achieve the welfare-maximizing result when the cost generators and cost bearers are both located within the same state or locality, and federal regulation may be necessary when the cost generators and cost bearers are located in different states.

The leading texts in environmental economics and law and economics all contain these or variants of these propositions, but they do not extend these propositions from the physical spillover context<sup>34</sup> to the context of losses in existence value.<sup>35</sup> Once one does extend these propositions, it becomes clear that there are several reasons why regulation might be more readily justified in the context of interstate losses in existence value than in the context of physical spillovers across state lines. First, the “victims” of physical spillovers sometimes can avoid the costs associated with the spillovers through unilateral action (e.g., by filtering contaminated water or air or by moving further away from the source of contamination), but unilateral avoidance is never feasible for those who would suffer losses in existence value as a result of the destruction of natural resources. Second, the “victims” of physical spillovers often are confined to a contained geographical area because of the spatial dimensions of the spillover, but existence value losses have no inherent geographic limit and, as a result, negotiations regarding existence value losses may involve greater numbers of parties and greater transaction costs than negotiations regarding physical spillovers. Finally, negotiations regarding existence value losses are more likely than negotiations regarding physical spillovers to run afoul of the norms that one should not pay a wrongdoer to stop committing a wrong and that concessions in bargaining should be reciprocal. The following Part uses two recent controversies to elaborate on these reasons.

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<sup>33</sup> There is universal agreement regarding this proposition. What is contested is whether, even in the absence of significant transaction costs, efficient allocations of resources will result regardless of the distribution and/or forms of legal entitlements, as the Coase Theorem predicts. See, e.g., Lucian Arye Bebchuk, *Property Rights and Liability Rules: The Ex Ante View of the Cathedral*, 100 MICH. L. REV. 601, 605–06 (2001) (arguing that the property and liability rule entitlements will yield different levels of efficiency even in the absence of transaction costs); Steven G. Medema & Richard O. Zerbe, Jr., *The Coase Theorem*, in ENCYCLOPEDIA OF LAW AND ECONOMICS 836 (Boudewijm Boukaert & Gerrit De Geest eds., 2000) (considering a range of critiques of the correctness and/or relevance of the Coase Theorem).

<sup>34</sup> Almost all of the texts I reviewed employ an example of a physical spillover such as air or water pollution from a stationary source to illustrate these propositions. Cooter and Ulen, for example, employ the example of “a factory located upstream from a populous city [that] dumps toxic materials into the river as a by-product of its production process.” ROBERT D. COOTER & THOMAS S. ULEN, *LAW & ECONOMICS* 41 (2000).

<sup>35</sup> Many texts limit their discussion of existence value (if any) to the calculation of natural resource damages under certain federal statutes governing liability for oil spills and similar accidents (as in the Exxon Valdez litigation). Richard Posner’s discussion of the economics of federalism in his enormously influential treatise makes no mention of existence value. See RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 665–80 (6th ed. 2003).

*A. Midwestern Power Plants and Old-Growth Forest*

The Clean Air Act of 1970 and 1977 grandfathered existing power plants from certain very strict pollution control requirements applicable to “new sources” of pollution.<sup>36</sup> It was widely predicted that the plants already in operation in 1977—many of which were old even then—would close in a few years. But because the grandfathered status under the Act allows firms to avoid substantial pollution control costs, a number of firms have kept old plants in operation through a program of aggressive “maintenance” and repairs.<sup>37</sup> Environmental groups claim that such “maintenance” is tantamount to the construction of a new source and thus should be subject to the Act’s strict pollution control requirements for new sources.<sup>38</sup>

A number of the oldest, dirtiest plants in dispute are located in the industrial Midwest, and a substantial portion of the sulfur-dioxide and nitrous-oxide pollution they generate migrates to the Northeast and intensifies smog-related problems there. The Northeastern states have pushed for the classification of the Midwestern plants as new sources. The Clinton Administration agreed with this position, but the Bush Administration reversed course, proposing a rule that would allow even plants that engage in substantial overhauls to avoid new source status. The Northeastern states have sued the federal EPA, claiming that the Bush Administration’s position violates the terms of the Clean Air Act.<sup>39</sup>

The states of the Pacific Northwest—Washington and Oregon—are home to the most extensive old-growth forests in the United States. A range of species, and not just the spotted owl, are adapted to old-growth forests, and have been threatened by dramatic declines in the acreage of old-growth forest. Old-growth trees provide highly valuable timber (on a per-tree basis). Timber companies, however, cannot afford to wait for the generation of new old-growth forest, so their consistent practice has been to clear-cut old-growth forest and re-forest, if at all, with trees designed for harvest in a short time. A substantial number of federal restrictions have been put in place in order to preserve the Pacific Northwest’s old-growth forests.

Given the geographic distribution of costs and benefits, it is easy to understand why politicians in the Midwestern and Northeastern states might differ regarding upgrades in pollution control systems in Midwestern power plants, and why politicians in the Pacific Northwest and those outside the region might differ regarding restrictions on the harvesting of old-growth timber.<sup>40</sup> In both the case of Midwestern plants’ generation of power without

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<sup>36</sup> See 42 U.S.C. §§ 7479(2)(c), 7479(3), 7501(3), 7501(4), 7503(a)–(c), 7602(j). (2002).

<sup>37</sup> Bruce Barcott, *Changing All the Rules*, N.Y. TIMES, Apr. 4, 2004 (Magazine), at 38.

<sup>38</sup> *Id.*

<sup>39</sup> See Eric Pianin, *New Pollution Standards Prompt Suit; 9 States Challenge U.S. Decision to Relax Rules*, WASH. POST, Jan. 1, 2003, at A1.

<sup>40</sup> I am simplifying matters for expositional purposes. The debate within Oregon and

modern pollution controls and the case of harvesting of old-growth timber in the Pacific Northwest, the activity generates costs both within and without the region where the activity is located. Dirty Midwestern plants contribute to poor air quality in the Midwest and in the Northeast; people in the Pacific Northwest and outside that region care about old-growth trees and lose existence value when they are destroyed. But the primary benefits of power generation without pollution controls and old-growth logging are regionally concentrated. The absence of pollution controls in Midwestern plants allows Midwestern utilities to charge somewhat lower prices for electricity than they otherwise would, and those lower prices may translate into more jobs in the local economy. The harvesting of old-growth timber in the Pacific Northwest, at least in the short term, supports jobs and generates tax revenue for localities.<sup>41</sup>

In the absence of federal regulation, the “victims” of the dirty production of electricity who live outside the Midwest and the “victims” of the destruction of old-growth forests who live outside of the Pacific Northwest have two possible means of avoiding the costs or harms at issue. First, they could attempt to avoid those costs unilaterally by taking self-protective measures.<sup>42</sup> Second, the “victims” could attempt to negotiate an agreement whereby they would pay the utilities or lumber harvesters to prevent the harm.<sup>43</sup> As described below, however, self-protection is never a plausible option in the context of existence-value losses, such as losses associated with the destruction of old-growth trees. Moreover, the prospects for successful bargaining are not high in either the case of physical

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Washington regarding forestry has been intense and complex. There are clearly many people within the Pacific Northwest—including prominent politicians—who strongly support preservation of the old-growth forests and believe that the benefits of preservation to people within the region far exceed the costs. *See, e.g.,* Robert McClure, *Renewed Effort Aims to Save Old-Growth Timber on Federal Land, Activist Rally for Old Growth*, SEATTLE POST-INTELLIGENCER REPORTER, Oct. 15, 2001.

<sup>41</sup> In the short term, until the old-growth forests are depleted, there may be diffuse benefits across the country in the form of somewhat lower prices for timber and wood products than would obtain under a ban on old-growth harvest. How environmental restrictions affect the prices individual consumers pay for commodities such as home heating fuel and wood construction housing is a complicated, highly contextual question. For example, many factors other than environmental regulation affect timber prices in the United States, including market demand domestically and abroad and import restrictions on foreign timber. *See, e.g., Stabilizing Is Key Word in Harvest of Timber*, COMMERCIAL APPEAL, Dec. 24, 2002, at DS3 (discussing effect of Canadian timber imports and trade negotiations on timber prices); Ira Breskin, *Rayonier’s Fireboard Plant Up for Sale*, DAILY DEAL, Dec. 12, 2000, at M and A (discussing effect of demand for housing on timber prices).

<sup>42</sup> From a welfare-maximization perspective, self-protection would be the efficient outcome if the costs of self-protection were less than the costs the “victims” would bear if nothing were done to change the status quo, and less than the costs of new pollution controls in the Midwest and the costs of a ban on old-growth harvests in the Pacific Northwest.

<sup>43</sup> Negotiated agreements of this sort would be welfare-maximizing outcomes if the costs of pollution controls and an old-growth harvest ban were less than the costs “victims” would bear if nothing were done to change the status quo, and less than the costs of unilateral self-protection measures that the victims could take (assuming there even were any such measures, which, as already indicated, is doubtful in the case of existence value losses).

spillovers or losses in existence value. The transaction costs and normative obstacles to a negotiated solution in the old-growth/existence value case are likely to be particularly daunting.

*B. Unilateral Action To Avoid Costs*

In cases of physical spillovers, unilateral action to avoid the costs associated with the spillover is often at least a possibility. Northeasterners might be able to mitigate or avoid the perceived costs associated with Midwestern pollution by, for example, cutting pollution produced in the Northeast such that, even with the continued presence of pollution from the Midwest, people in the Northeast would not suffer from any of the problems typically associated with “smog” (e.g., lung irritation, asthma, death, property damage, or aesthetic losses resulting from poor visibility). Similarly, people in a state whose groundwater supply has been contaminated by pollution emanating from another state can avoid the costs associated with groundwater contamination by switching to other sources of drinking water.

Unlike losses associated with physical spillovers, existence-value losses can never be avoided, at any cost, by anyone but the party with actual physical control of the resources at issue. Those who would lose existence value as a result of the destruction of resources far away, in other states, have no concrete actions available to them that would lessen or eliminate their losses in existence value in the event that the resources at issue are in fact destroyed. What can people in (say) New York and California who derive value from the existence of Washington old-growth forest possibly do unilaterally to avoid the loss in existence value that would result from the destruction of that forest? The more general point is this: in physical spillover settings, either the in-state generator of the cost or the out-of-state bearer of the cost may be the cheapest cost avoider, depending on the particular factual circumstances, but in the loss of existence value setting, the in-state generator of the cost (the would-be resource destroyer) is the only possible cost avoider. Thus, at least where the loss in existence value from natural resource destruction outweighs the gain from resource destruction, the welfare-maximizing outcome *always* is a restriction on resource destruction.

Contrary to this view, since existence value losses are incurred only because some people attach existence value to certain resources, one might argue that the potential bearers of existence-value losses always can avoid those losses at no cost simply by changing their way of thinking.<sup>44</sup> By

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<sup>44</sup> Similar arguments could be made if we re-cast the relevant costs as losses in amorphous option value, rather than losses in existence value. On the one hand, one could argue that because amorphous options are just that—amorphous—the party who loses amorphous option value as a result of actions in another state will not know enough to set about attempting to mitigate or offset her losses. On the other hand, one could argue that because amorphous options are amorphous and not grounded in specific knowledge of how a re-

contrast, losses such as losses in life due to poor air quality can only be avoided by real, concrete and unavoidably costly action. On some level, however, all preferences and tastes are mental constructs—a matter of how people think, rather than some extra-mental truth.<sup>45</sup> Smog imposes costs on people because they value the aesthetics of good visibility, the absence of lung irritation, and the longer median lifespan associated with good air quality. In theory, we could ask people to avoid the costs of smog by changing their thinking about aesthetics, about the experience of lung irritation, even about the desirability of long life. But we do not do so because in the welfare-economics tradition, people's tastes and preferences and hence identification of actions or inactions as imposing costs and benefits are (generally) taken as given for the purposes of assessing the effects of different courses of conduct on aggregate welfare. If we are to take people's preferences and tastes as given with respect to smog, and not ask them to change their understanding of smog as a cost-imposing phenomenon, then it is hard to see how we can justify taking a different approach with respect to people's preferences regarding the continued existence of old-growth forests.

### *C. Negotiated Agreements To Avoid Costs*

In the context of interstate air pollution emanating from the Midwest, the transaction costs of organizing all the affected states and then achieving a bargaining solution among them are likely to be high even if we assume that state political actors faithfully represent the interests of their constituents and try in good faith to reach negotiated solutions.<sup>46</sup> In intragroup negotiations among the Midwestern states as to how much each state would require from the Northeastern states in order to agree to pollution reductions, each state is likely to overstate the costs it would bear by having its firms reduce pollution, or at least be suspected of doing as much by the other members of the group. Similarly, intragroup bargaining among the Northeastern states may unravel because each state will, or will be suspected of, understating how much it would benefit from pollution reductions and hence how much it would be willing to contrib-

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source will be of use, they are primarily a psychological phenomenon, a matter of attitude toward the unknown. Hence losses in amorphous option value can be overcome—avoided—with nothing more than a change in thinking toward the unknown.

<sup>45</sup> See LOUIS KAPLOW & STEVEN SHAVELL, *FAIRNESS VERSUS WELFARE* 19 (2002) (“The only limit on what is included in well-being is to be found in the minds of the individuals themselves.”).

<sup>46</sup> Still, while high, the transaction costs involved in reaching and implementing a bargaining solution certainly are less when states can undertake the bargaining and implementation than when bargaining and implementation is left to the (many) individuals and firms with a stake in the conflict. State governments include pre-existing (that is, pre-bargaining) institutions with the authority and apparatus to collect money on threat of force, to impose restrictions on firms, and to levy fines and other penalties for misconduct or cheating by firms.

ute to the total sum to be offered the Midwestern states. Intergroup bargaining—bargaining between the Midwestern states as a group and the Northeastern states as a group—is also likely to break down.<sup>47</sup> Even if the two groups could agree on the amount the Northeast should pay the Midwest, a deal may elude them because of the difficulties in defining mechanisms and institutions to monitor compliance and penalize noncompliance.

The best evidence of the enormity of the transaction cost obstacles to transboundary water and air pollution agreements is that, although such pollution is commonplace throughout the world and is a source of ongoing tensions among countries and among provinces of the same country, instances of binding agreements addressing transboundary pollution are few. Of the agreements that have been reached, most involve only a few sovereigns and pollution patterns that are symmetrical—that is, the sovereigns involved both produce and receive pollution of roughly the same sort.<sup>48</sup> The absence of agreements involving large numbers of sovereigns supports the general view in the bargaining literature that the likelihood of bargaining breakdown increases with the number of participants in the bargaining process.<sup>49</sup> The absence of agreements involving one-way, non-reciprocal pollution may reflect the power of a widely accepted norm according to which no sovereign has the right, morally, to impose pollution on another.<sup>50</sup> Given this widely accepted norm, it may be impossible for leaders of a country that is the “victim” of one-way, non-reciprocal pol-

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<sup>47</sup> In such bargaining, the Midwestern group of states may be tempted to exaggerate the costs of new pollution controls, and the Northeastern group may be tempted to overstate the value of reduced pollution. Even if the Midwestern and Northeastern groups do not engage in strategic bargaining, the negotiations may fail because each side may suspect the other of posturing and misrepresentation.

<sup>48</sup> See Thomas W. Merrill, *Golden Rules for Transboundary Pollution*, 46 DUKE L.J. 931, 933, 986 (1997) (explaining that “only a few” international agreements address transboundary pollution, most such agreements lack “substantive limitations on polluting activity,” and “most of the examples of meaningful regulation of transboundary pollution that exist relate to pollution of boundary waters” and thus involve “elements of . . . reciprocal transboundary pollution”); Daniel C. Esty, *Toward Optimal Environmental Governance*, 74 N.Y.U. L. REV. 1495, 1513 (1999) (explaining that “[i]n the absence of . . . shared environmental resources that create a sense of reciprocity . . . the difficulty of getting an agreement . . . becomes nearly insurmountable”).

<sup>49</sup> See generally RUSSELL KOROBKIN, *NEGOTIATION THEORY AND STRATEGY* 329 (2002) (explaining that more parties “means a more complicated negotiation process” and “additional strategic complexities”); Clayton P. Gillette, *The Exercise of Trumps By Decentralized Governments*, 83 VA. L. REV. 1347, 1373–74 (1997) (arguing that the potential for holdouts increases with the number and heterogeneity of the parties to the negotiation).

<sup>50</sup> Principle 21 of the Stockholm Declaration for example, provides that “States have, in accordance with the Charter of the United Nations and the principles of international law . . . the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.” *Stockholm Declaration of the United Nations Conference on the Human Environment*, June 16, 1972, 11 I.L.M. 1416, 1420. See also Merrill, *supra* note 48, at 950 (explaining the principle that one country may not pollute another is a “consensus [element] of today’s customary international law”).

lution by another country to justify to themselves and their constituents paying the other country to end the pollution.<sup>51</sup>

The transaction costs of bargaining regarding transboundary losses in existence value are likely to be equal to—or even greater than—the transaction costs of bargaining regarding transboundary air and water pollution. In the context of air and water pollution, the area that is adversely affected is often geographically limited: we know, for example, that air quality in California, because of dominant wind patterns, is not significantly affected by the Midwestern power plants. But losses in existence value are not tied to—and hence not limited to—wind or river flow patterns, or any other geographical constraint. The absence of any necessary geographic limits to existence-value externalities means that the number and diversity of states involved may be much greater than in the air and water pollution context, and the prospects for successful bargaining dimmer as a consequence.

Of course, it is possible that losses in existence values may be heavily concentrated in only one or a few states. But the available data suggests otherwise. As a proxy—admittedly a very rough one—for the geographic distribution of those who derive existence value from natural resources within the United States, I employ the membership of three national environmental groups: Friends of the Earth, the Natural Resources Defense Council, and the National Wildlife Federation. Each of these groups advocates for the preservation of natural resources located throughout the country, including old-growth forests in the Pacific Northwest. For each group I collected a state-by-state breakdown of national membership in percentage terms for the year 2000. The middle column in Figure One reports the range among the three groups for the percentage of the national membership that resides in each state. The right-hand column in Figure One reports the percentage of the national population that resides in each state. The geographical distribution of members in the three groups suggests that existence-value concerns are held by people throughout the country. Each group has members in every state, and the top five states in terms of membership constitute less than fifty percent of the total membership of each group. Although a number of states have memberships disproportionate to their share of the national population, suggesting disproportionate strength or weakness of existence-value concerns in certain states, many states have memberships in proportion with their share of the national population.<sup>52</sup>

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<sup>51</sup> See Ward Farnsworth, *Do Parties to Nuisance Cases Bargain After Judgment? A Glimpse Inside the Cathedral*, 66 U. CHI. L. REV. 373, 400–02 (1999) (explaining that the absence of bargaining among parties in nuisance cases may be due to concerns that offering money in return for permitting perceived nuisances to continue is akin to “bribery”).

<sup>52</sup> Voting patterns in Congress are largely consistent with the pattern of support suggested by the membership breakdown of the three environmental groups. In Congress, there is unusually strong support for federal programs to preserve natural resources among mem-

FIGURE ONE

State	Percentage of National Membership (range for three groups)	Percentage of U.S. Population
Alaska	.2–.27%	.2%
Alabama	.47–.8%	1.6%
Arkansas	.37–.6%	.9%
Arizona	1.88–1.9%	1.8%
California	12.2%–18.97%	12.0%
Colorado	2.2–2.76%	1.5%
Connecticut	1.99–2.0%	1.2%
District of Columbia	.2–.37%	.2%
Delaware	.3–.4%	.3%
Florida	5.27–6.3%	5.7%
Georgia	1.46–1.97%	2.9%
Hawaii	.57–.8%	.4%
Iowa	.72–1.0%	1.0%
Idaho	.4–.41%	.5%
Illinois	4.01–4.7%	4.4%
Indiana	1.31–1.9%	2.2%
Kansas	.62–.8%	1.0%
Kentucky	.64–.9%	1.4%
Louisiana	.42–.6%	1.6%
Massachusetts	3.0–3.73%	2.3%
Maryland	2.44–2.7%	1.9%
Maine	.7–.86%	.5%

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bers from the Northeastern and west coast states, and unusually weak support among members from the South. *See generally* Sayeed R. Mehmood & Daowei Zhang, *A Roll Call Analysis of the Endangered Species Act Amendments*, 83 AM. J. AGRIC. ECON. 501 (2001) (finding this pattern, even controlling for party and ideological affiliations); LEAGUE OF CONSERVATION VOTERS, NATIONAL ENVIRONMENTAL SCORECARDS (last visited Mar. 1, 2004), at <http://www.lcv.org/scorecard> (documenting the same pattern in year-by-year voting scorecards).

Michigan	3.05–3.8%	3.5%
Minnesota	1.87–2.0%	1.7%
Missouri	1.38–1.8%	2.0%
Mississippi	.2–.4%	1.0%
Montana	.3–.43%	.3%
North Carolina	2–2.4%	2.9%
North Dakota	.09–.1%	.2%
Nebraska	.31–.5%	.6%
New Hampshire	.8–.82%	.4%
New Jersey	3.44–4.0%	3.0%
New Mexico	.6–.92%	.6%
Nevada	.59–.7%	.7%
New York	8.0–8.91%	6.7%
Ohio	3.08–4.2%	4.0%
Oklahoma	.45–.7%	1.2%
Oregon	1.5–2.53%	1.2%
Pennsylvania	4.53–6.0%	4.4%
Rhode Island	.46–.5%	.4%
South Carolina	.64–1.0%	1.4%
South Dakota	.11–.2%	.3%
Tennessee	.95–1.2%	2.0%
Texas	3.2–3.8%	7.4%
Utah	.4–.52%	.8%
Virginia	2.47–3.2%	2.5%
Vermont	.5–.66%	.2%
Washington	2.4–3.64%	2.1%
Wisconsin	1.99–2.5%	1.9%
West Virginia	.33–.5%	.6%
Wyoming	.19–.2%	.2%

Even if all the other obstacles could be overcome, normative objections might well undermine any multi-state agreement regarding resources such as old-growth forests. Just as some people believe it is wrong for one state to permit its firms to pollute another state, some people believe that it is wrong for a state to permit its firms to destroy natural resources, at least non-reproducible or rare resources.<sup>53</sup> This normative commitment, whatever one may think of its merits, complicates any effort at a bargaining solution: if those who value the existence of natural resources most highly are also those most likely to believe that “paying off” parties such as timber companies or timber states is morally wrong, and if those people therefore refuse to contribute to “payoffs,” then it is unlikely that the timber companies or timber states will ever receive an offer in the context of multi-state bargaining that reflects the true loss in existence value that would result from the destruction of old-growth forests.<sup>54</sup>

In the context of physical spillovers, sometimes the polluted state is also a polluting state, so any normative objection to negotiated solutions

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<sup>53</sup> For example, some environmentalists strongly opposed the deal struck in 1999 whereby the federal and California state governments committed \$380 million to purchase an area of redwoods in Northern California’s Headwaters Forest—some a thousand years old—because they believed that the landowner, Pacific Lumber, had no moral right to destroy the redwoods. See Carolyn Lochhead, *Feinstein Seizes the Middle Ground: Senator Finds Allies on Both Sides of Aisle*, S.F. CHRON., June 2, 2003, at A1 (describing how some environmentalists were “miffed” by Senator Feinstein’s support for the Headwaters deal); See also *You Decide*, TEX. MONTHLY, June 1999 (explaining that some environmentalists opposed government purchase of the Headwaters). The normative objection to paying resource owners to stop destroying resources also may account for some of the “protest” responses to contingent value surveys: some respondents in surveys asking how much they would be willing to pay to prevent the destruction of wildlife or wilderness protest the question, sometimes by stating a zero or infinity figure, sometimes by refusing to answer at all, sometimes by openly arguing with the survey administrators. See generally Douglas R. Williams, *Valuing Natural Environments: Compensation, Market Norms, and the Idea of Public Goods*, 27 CONN. L. REV. 365 (1995) (arguing that moral repugnancy may explain protests to contingent value surveys); see also MARK SAGOFF, *THE ECONOMY OF THE EARTH: PHILOSOPHY, LAW & THE ENVIRONMENT* 84–98 (1988) (exploring moral concerns raised by contingent value methodology, and arguing that protests to contingent value surveys reflect the moral judgment that resource valuation and preservation is properly a matter of public deliberation and regulation and not properly a matter of marketplace or simulated marketplace transactions).

<sup>54</sup> The previous discussion is not meant to suggest that environmentalists cannot and do not use market transactions to secure the existence of natural resources. They plainly do, at times. In the absence of high transactions costs, however, we might expect to observe more land, and in particular more expensive land, acquired for conservation purposes, as well as binding contractual agreements between environmentalists and industry/property owners regarding land use practices on land that is not acquired. Moreover, to the extent that some environmental groups have been successful in land acquisitions, that success is due in part to the fact that they have negotiated against a backdrop of actual and threatened government regulation, and also in part due to the fact that they have been able to take advantage of a range of federal, state and local subsidies and other supports for the creation of natural preserves and habitat corridors. See Leigh Raymond & Sally K. Fairfax, *The “Shift to Privatization” in Land Conservation: A Cautionary Essay*, 42 NAT. RESOURCES J. 599, 635 (2002) (concluding that “[w]e need to rely less on the idea that ‘public’ and ‘private’ alternatives form some kind of clear dichotomy of policy options, and more on the idea that most policies and resulting tenure arrangements are a blend of the two”).

is muted. Two states with a common boundary and/or common resource and similar levels of urbanization and industrialization are likely to emit similar pollutant streams, and hence to pollute each other in a somewhat comparable fashion. Indiana and Illinois share a common resource—Lake Michigan—and have roughly similar patterns of urbanization and industrialization. Consequently, they emit similar pollutants into Lake Michigan (most notably a massive amount of sewer runoff): neither state is solely “the polluter” nor solely “the polluted.” The two states thus can enter negotiations without the impediment of one state viewing itself as “the innocent” and the other state as “the guilty,” and they can bargain on the basis of reciprocal concessions in the amount of pollution each contributes to Lake Michigan.<sup>55</sup>

Losses in existence value, in contrast to physical spillovers, are not likely to be more salient among neighboring states than among states that are very far—and hence very different in physical environment—from one another. People in Massachusetts may suffer from losses in existence value from the destruction of pristine tundra in Alaska, but they do not and could not impose symmetrical losses in existence value on Alaskans who value pristine tundra: Massachusetts, after all, has no tundra. Accordingly, the people in Massachusetts who value pristine tundra may perceive themselves as wholly “innocent” of natural resource destruction and the firms and people in Alaska who wish to drill for oil in the tundra as wholly “guilty.” Bargaining between the states cannot proceed on the basis of reciprocal concessions because reciprocity typically “demands that one sort of action be reciprocated with a similar sort of action.”<sup>56</sup>

#### IV. THE NONMEASURABILITY OBJECTION TO EXISTENCE VALUE REGULATION

Federal regulation to prevent interstate losses in existence value may be welfare maximizing in theory, but specific instances of federal preservation regulation premised on existence-value concerns may not be welfare maximizing in fact. According to some critics of existence-value regulation, there is no way to measure existence values, and hence no way to assure ourselves that regulation premised on existence-value concerns enhances aggregate welfare.<sup>57</sup> This argument builds on an indisputable fact:

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<sup>55</sup> See ROBERT C. CIALDINI, *INFLUENCE SCIENCE AND PRACTICE* 22 (4th ed. 2001) (arguing that a strong norm exists in bargaining in favor of reciprocity, and also arguing that reciprocation “possesses awesome strength” and “can overpower the influence of other factors that normally determine” decision-making); DEAN G. PRUITT & PETER J. CARNEVALE, *NEGOTIATION IN SOCIAL CONFLICT* 122 (1993) (discussing the equal concessions norm in bargaining).

<sup>56</sup> See CIALDINI, *supra* note 55.

<sup>57</sup> See Donald J. Boudreaux & Roger E. Meiners, *Existence Value and Other of Life's Ills*, in *WHO OWNS THE ENVIRONMENT?* 153, 158–61 (Peter J. Hill & Roger E. Meiners eds., 1998) (arguing that even if the problems with contingent value methodology could be

existence values are not market goods, and hence cannot be measured by marketplace transactions. We know how much people value a Honda Accord because they repeatedly spend \$20,000 for one; we do not know how much people value the continued existence of the Tooth Cave Spider<sup>58</sup> as a species since there is no—and could be no—fully functional market in the purchase of that good, given the free-riding problems and other transactions costs that would be involved in any effort to organize and operate such a market.

But it is not true that only market goods have values that can be measured in some meaningful way. Proponents of the view that existence values are not measurable flatly reject efforts to gauge the value of natural resources by means of surveys in which respondents are asked how much they would be willing to pay to preserve resources. As discussed below, however, such contingent value (“CV”) surveys do capture something useful about existence values for natural resources—for many resources, such values are substantial. The federal political process, however, is the primary response to the nonmeasurability objection: that process provides a reasonably good measure of the comparative value of preserving and destroying natural resources, and, if anything, probably underestimates the magnitude of existence-value preferences relative to preferences for engaging in activities associated with the degradation or destruction of natural resources.

#### A. *What Contingent Value Methodology Shows and Does Not Show*

In CV studies, researchers ask people to assign a value to a good that may or may not have conventional market value.<sup>59</sup> The assignment process

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overcome, existence value valuations would be “economically invalid” because “[o]nly by connecting many people in a decentralized process of valuation”—that is, only by market valuation—“does useful valuation become doable”); Rosenthal & Nelson, *supra* note 8, (criticizing existence values as artifacts of the instruments purportedly used to solicit and measure them).

<sup>58</sup> The endangered Tooth Cave spider is found only in certain caves within Texas. See *GDF Realty Inv. v. Norton*, 326 F.3d 622, 640–41 (5th Cir. 2003) (upholding as constitutional prohibitions on the destruction of the habitat of the Tooth Cave spider and five other species of endangered cave-dwelling invertebrates).

<sup>59</sup> One of the criticisms of CV surveys is that the respondents sometimes are not aware of the existence of the resource in question before receiving the survey with its description of the resource and the threats to the resource. In this view, because most people would not know about (for example) caribou or express any existence value with respect to caribou in the absence of being told about the caribou and threats to their existence, most people cannot be understood as experiencing any welfare loss from the destruction of caribou. See Glenn C. Blomquist & John C. Whitehead, *Existence Value, Contingent Valuation, and Natural Resources Damages Assessment*, 26 *GROWTH & CHANGE* 573, 583 (1995) (addressing the argument that “no welfare change has occurred for unfamiliar respondents . . . even if [they] were educated by contingent market information and could behave rationally in contingent markets”). However, all preferences, including preferences relating to spillovers and losses of use, are based, in significant part, on an interplay of pre-existing values and commitments, some longstanding, and the receipt of information provided to or made

can entail stating a cash figure outright, or asking respondents to choose between or rank various options.<sup>60</sup> The claim that CV studies are poorly structured ignores the evolution in CV research designs over time, including, most notably, increases in the amount of detailed background information provided to respondents regarding the good to be valued.<sup>61</sup> CV surveys also now typically remind respondents of budget constraints and prompt respondents to consider the availability of substitutes for the good at issue. For example, one CV study employed the following reminder: “By agreeing to pay this amount of money to avoid this environmental change less money would be available for your other expenditures. Here is a list of some budget categories that people usually have. Which budget would your money come from?”<sup>62</sup>

More than 2000 CV studies have been completed, a significant number of which have been directed toward the non-use or existence value of natural resources such as wildlife and wilderness.<sup>63</sup> Several conclusions may be drawn from this now considerable body of scholarship. First, the published CV surveys find that people—in the United States and elsewhere—do assign substantial value to the continued existence of some kinds of natural resources, notably relatively rare or threatened resources. Surveys regarding endangered species consistently show that the median respondent would pay a significant amount of money each year to secure the continued preservation of a species.<sup>64</sup> According to CV survey results, people value both the

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available to the holder of those values and commitments.

<sup>60</sup> This variant is sometimes called Choice Modeling or CM. CM can generate specific dollar figures for the willingness to pay for specific environmental goods, although in the case of CM “willingness to pay [is] indirectly recovered from people’s rankings, ratings or choices,” rather than directly provided by the survey respondent. Nick Hanley et al., *Choice Modeling Approaches: A Superior Alternative for Environmental Valuation?*, in *ISSUES IN ENVIRONMENTAL ECONOMICS* 185 (Nick Hanley & Colin J. Roberts eds., 2002).

<sup>61</sup> See Richard T. Carson et al., *Contingent Valuation: Controversies and Evidence*, 19 *ENVTL. & RES. ECON.* 173, 196–97 (2001) (arguing that “CV research has matured as a result of the spotlight that has been placed on it”); NICK HANLEY & CLIVE L. SPLASH, *COST-BENEFIT ANALYSIS AND THE ENVIRONMENT* (1993) 66–67 (arguing that “results from CVM [contingent valuation methodology] studies are heavily dependent on how well the study is designed, carried out and interpreted,” concluding that “CVM is a useful technique for estimating economic values for some non-market resources,” and explaining that this “conclusion has been reached by (i) examining the results of individual CVM surveys; (ii) experimenting with the degree of repeatability of CVM results; and (iii) using other methodologies alongside CVM to value the same resource”).

<sup>62</sup> See IAN J. BATEMAN ET AL., *ECONOMIC VALUATION WITH STATED PREFERENCE TECHNIQUES* 143 (2002) (offering example of a variety of budget and substitutes reminders).

<sup>63</sup> For helpful bibliographies of CV studies, see Hanley et al., *supra* note 60, app. I and II; UCLA Dept. of Economics, *Recent Literature on Contingent Valuation Methods for Valuing Environmental Goods*, Mar. 16, 2001, at <http://www.sscnet.ucla.edu/ssc/labs/cameron/nrs98/cvinv.htm> (last visited Mar. 21, 2004) (on file with the Harvard Environmental Law Review).

<sup>64</sup> Some CV studies have asked respondents how much they would be willing to accept to allow the destruction of a resource, rather than how much they would be willing to pay to prevent the destruction of the same resource. The willingness-to-accept (“WTA”) approach consistently produces much higher median results than the willingness-to-pay (“WTP”) approach. Because there is strong suspicion that even the WTP approach produces inflated results, the WTA approach has fallen into disfavor, although there are theoretical arguments in

preservation of famous species such as the spotted owl of the Pacific Northwest (\$95 per household per year) and quite obscure species such as endangered minnows native to Wisconsin (\$6 per household per year).<sup>65</sup> These per-household survey results indicate very large nationwide valuations.<sup>66</sup>

Second, although there are a number of published articles concluding that CV surveys are not a reliable means of valuation because they produce erratic, "irrational" results, no published article asserts that CV data exist that show that people do *not* place significant value on endangered species, wilderness, or other natural resources. A great deal of money is at stake for large corporations in the politics of preservation regulation and in natural resource damages disputes that involve the accidental destruction of natural resources. It is thus reasonable to assume that private funding has been available to explore whether CV studies can be structured to generate *de minimis* or zero median valuations for wildlife and/or wilderness. The absence of any published accounts of research of this sort may reflect the failure of efforts to generate *de minimis* or zero median valuations.

Third, CV survey results reflect a certain degree of internal logic or rationality on the part of survey respondents, notwithstanding forceful claims and some thoughtful arguments to the contrary.<sup>67</sup> Notably, in a relatively

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favor of the WTA approach. See NICK HANLEY ET AL., ENVIRONMENTAL ECONOMICS IN THEORY AND PRACTICE (1997) 364, 395–96 (discussing those arguments).

<sup>65</sup> See Daniel Hagan et al., *Benefits of Preserving Old-Growth Forest and the Spotted Owl*, 10 CONTEMP. POL'Y ISSUES 13 (1992) (reporting results for spotted owls in the Pacific Northwest); Kevin J. Boyle & Richard C. Bishop, *Valuing Wildlife in Benefit-Cost Analyses: A Case Study Involving Endangered Species*, 23 WATER RESOURCES RES. 943, 949 (1987) (reporting results for Wisconsin bald eagles and Wisconsin striped shiners). See also Thomas H. Stevens et al., *Measuring the Existence Value of Wildlife: What Do CVM Estimates Really Show?*, 67 LAND ECON. 390, 395–96 (1991) (reporting survey results showing average willingness to pay bids of "between \$10.62 and \$75.31 for bald eagle preservation" and Atlantic salmon existence values of "\$10 to \$30 above the willingness to pay for fishing licenses").

<sup>66</sup> See, e.g., Jonathan Rubin et al., *A Benefit-Cost Analysis of the Northern Spotted Owl*, 89 J. FORESTRY 25, 27–28 (1991) (estimating the nationwide non-use value of northern spotted owls' continued existence to be \$1.48 billion per year); John Loomis & Earl Ekstrand, *Economic Benefits of Critical Habitat for the Mexican Spotted Owl: A Scope Test Using a Multiple-Bounded Contingent Valuation Survey*, 22 J. AGRIC. & RESOURCE ECON. 356, 365 (1997) (estimating the nationwide non-use value of the Mexican spotted owl's critical habitat within the United States to be at least \$1.8 billion per year). With very few exceptions, CV studies do not draw from a multi-state pool, and instead rely upon extrapolation from state-wide or even more geographically circumscribed samples in order to estimate nationwide values. In these extrapolations, researchers typically assume that both use and non-use values decrease in some linear fashion with geographic distance, but that blanket assumption is not tenable. One multi-state study, for example, found that, controlling for other variables, respondents in Washington value programs to preserve California salmon populations as much as Californians do. See Jennifer Pate & John Loomis, *The Effect of Distance on Willingness to Pay Values: A Case Study of Wetlands and Salmon in California*, 20 ECOLOGICAL ECON. 199 (1997).

<sup>67</sup> I chose the words "a certain degree" carefully because, beyond a doubt, some CV studies have yielded results that seem less-than-wholly "rational." See, e.g., Peter A. Diamond & Jerry A. Hausman, *Contingent Valuation: Is Some Number Better Than No Num-*

large number of surveys, respondents' valuations of environmental goods varied with the magnitude or amount of the resource that would be preserved.<sup>68</sup> Respondent sensitivity to the scope of the threatened loss has been most apparent in second-generation CV studies where respondents were presented with a substantial amount of information about the good that they were asked to value.<sup>69</sup>

The body of CV work to date thus suggests that existence values are substantial for many natural resources, but there is no easy means of saying just how substantial. Some overstatement or inflation almost certainly occurs when people translate their non-market, non-monetary existence-value preferences into monetary terms. The difficult, and as yet unanswered, question is, *how much inflation*. A distinguished panel of experts convened by the National Oceanic and Atmospheric Administration ("NOAA") noted

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*ber?*, J. ECON. PERSP., Fall 1994, at 45 (answering no and exploring a number of problems with CV surveys); Daniel Kahneman & Jack L. Knetsch, *Valuing Public Goods: The Purchase of Moral Satisfaction*, 22 J. ENVTL. ECON. 57 (1992) (reviewing a range of results in CV studies that deviate from the standard principles of rational choice). As noted above, however, the body of CV scholarship is large and reflects continual improvements. Moreover, even if CV surveys never produce fully rational results, that does not necessarily mean that CV results so deviate from what a true market would produce as to be useless as proxies for true market valuations. In assessing how much the hypothetical CV markets differs from a true market in terms of rationality of results (however one measures rationality), one needs to make judgments both as to the level of rationality in the hypothetical market *and* in the true market. It is certainly arguable that true market actors, such as consumers and investors, sometimes act in ways that are not readily explicable by means of rational choice theory. See, e.g., Donald C. Langevoort, *Taming The Animal Spirits of the Stock Markets*, 97 Nw. U. L. REV. 135, 138, 140–47 (2002) (arguing that there is substantial evidence of behavior inconsistent with rational choice theory in the securities markets, and noting that if the capital markets "are not efficient, it is difficult to imagine many other markets that would be"); Angelo DeNisi & Raed Elaydi, *Which Came First, The Irrational Consumer or the Irrational Corporation?*, 6 ROGER WILLIAMS U. L. REV. 33, 50 (2000) (concluding that "[c]onsumers often make irrational decisions because of the operation of various cognitive biases"); Lisa Heinzerling, *Markets for Arsenic*, 90 GEO. L.J. 2311, 2330–31 (2001) (arguing that "modern markets are shaped by advertising that attempts to cater to or even exploit consumers' irrational impulses, rather than moderate them").

<sup>68</sup> See Richard Carson, *Contingent Valuation Surveys and Tests and Insensitivity to Scope*, in DETERMINING THE VALUE OF NON-MARKETED GOODS: ECONOMICS, PSYCHOLOGICAL, AND POLICY RELEVANT ASPECTS OF CONTINGENT VALUE METHODS 127–63 (R. J. Kopp et al. eds., 1997) (concluding that thirty-one studies completed between 1984 and 1997 demonstrate sensitivity to scope, and four do not); see also Bradley S. Jorgensen et al., *Fairness in the Contingent Valuation of Environmental Public Goods: Attitudes Toward Paying for Environmental Improvements at Two Levels of Scope*, 36 ECOLOGICAL ECON. 133 (2001) (discussing results suggesting that by excluding respondents who express negative attitude in general toward the making of payments for environmental goods, CV surveys can achieve results that are more sensitive to scope). One of the difficult questions in assessing whether respondents are "rationally" sensitive to scope is whether and to what extent we should assume marginally diminishing returns from the preservation of natural resources. See generally Kimberly Rollins & Audrey Lyke, *The Case for Marginal Existence Values*, 36 J. ENVTL. ECON. & MGMT. 324 (1998). If the marginal returns diminish sharply, then it may be perfectly rational for survey respondents to value the preservation of (for example) 2000 seals at a particular site only slightly more than the preservation of 1000 seals.

<sup>69</sup> See Carson, *supra* note 68, at 183.

in 1993 that “hypothetical markets tend to overstate willingness to pay for private as well as public goods” and “[t]he same bias must be expected to occur in CV studies,” but nonetheless concluded that “CV studies convey useful information” and “produce estimates reliable enough to be the starting point” for the estimation of existence values.<sup>70</sup> In issuing its 1996 regulations approving the use of Contingent Valuation Methodology (“CVM”) in natural resource assessments, NOAA recognized the perceived overstatement of values in CVM results but suggested, unhelpfully, that any concerns regarding overstatement must be worked out in the context of “specific incidents” and “circumstances.”<sup>71</sup> It is not obvious that we will ever be able to answer the question of how much CV surveys inflate existence values. Consequently, we must look elsewhere—to the federal political process itself—for measurements of the comparative value of preserving and degrading or destroying natural resources.

### B. Political Outcomes as a Measurement Device

At least in a representative democracy, political outcomes track, if imperfectly, the relative weight of competing sets of preferences held by members of the population. The weight of a set of preferences held by a group is a function of breadth—how many people hold particular preferences—and depth—the intensity with which the preferences are held. The weight of the preferences of people in favor of preservation reflect the aggregate social value of preservation, and the weight of preferences in opposition to preservation reflect the aggregate social value of activities associated with natural resource degradation or destruction.<sup>72</sup> By weighing pro-

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<sup>70</sup> NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, NATIONAL RESOURCE DAMAGE ASSESSMENTS UNDER THE OIL POLLUTION ACT OF 1990, APPENDIX I—REPORT OF THE NOAA PANEL ON CONTINGENT VALUATION, 58 Fed. Reg. 4601, 4610 (Jan. 15, 1993). The panel consisted of Kenneth Arrow, Robert Solow, Paul Portney, Edward Learner, Roy Radner, and Howard Schuman.

<sup>71</sup> National Oceanic and Atmospheric Administration, National Resource Damage Assessments, Final Rule, 61 Fed. Reg. 440, 470 (Jan. 5, 1996) (to be codified at 15 C.F.R. pt. 990).

<sup>72</sup> One might argue that this political measurement of competing preferences only applies to the making of laws by elected politicians and not their implementation by unelected bureaucrats in administrative agencies. But officials in charge of administrative agencies report to an elected President and an elected Congress. Moreover, agency rule-making and enforcement processes are influenced by the information offered by groups in the general population, and the ability of a group to harness and present information is, presumably, not unrelated to the size of the group and intensity of the preferences of its members. When the venue of decision-making is the federal courts, the size of a group and the intensity of its members' preferences presumably also influence the effectiveness with which the group participates in the litigation and in post-judicial-decision lobbying and advocacy. Non-constitutional judicial decisions, in any event, are always subject to “correction” by the more explicitly political branches of government: in *TVA v. Hill*, 437 U.S. 153 (1978), for example, the Supreme Court upheld legal protections for the habitat of the snail darter but Congress in effect overruled the decision in an appropriation rider. See Zygmunt J. B. Plater, *In the Wake of the Snail Darter: An Environmental Law Paradigm*

preservationist preferences against anti-preservationist preferences, the political process itself thus takes account of the relative magnitudes of the aggregate social value of preserving natural resources and the aggregate social value of activities associated with natural resource degradation or destruction.<sup>73</sup>

One objection to the use of the political process as a measure of the relative weight of competing sets of preferences is that the political process may favor certain types of groups over others, and hence over-weigh certain sets of preferences relative to others. Political markets, like other markets, can be skewed, and in that sense fail.<sup>74</sup> If there is any skewing in the federal political process vis-à-vis natural resource preservation, however, it is in favor of the opponents of preservation. The principal opponents of natural resource preservation—industries that produce or extract commodities from nature, such as the timber and mining industries,<sup>75</sup> and the construction and real estate development industries—typically face lower transaction costs of political organization than the proponents of preservation. Moreover, the structure of federal political institutions, such as the Committee system in Congress, favors the interests of extractive industries in their conflicts with proponents of natural resource preservation.

Figure Two differentiates among six scenarios, based on whether the transaction costs of political organization and/or political structures disfavor, are neutral with respect to, or favor proponents of natural resource preservation. As Figure Two shows, we would expect to observe a bias in political outcomes in favor of the opponents of natural resource preservation in two of the scenarios (I and II). We also would expect this bias to be greatest in scenario I, in which both transaction costs and political structures favor opponents of natural resource preservation.

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*and Its Consequences*, 19 U. MICH. J.L. REV. 805, 813–14 (1986).

<sup>73</sup> The preferences at issue in the federal political process are, in economic terms, revealed preferences, rather than merely stated ones, since preferences have force in politics only when individuals or groups take actions that entail a cost in time, effort and/or money (e.g., attending a meeting or rally, organizing a letter-writing campaign, contributing money, voting).

<sup>74</sup> A political outcome is not skewed, as I am using the term, simply because it reflects an uneven distribution of wealth in the polity. The normative merits of both an uneven distribution of wealth and a large private role in the financing of elections through campaign contributions are obviously contestable, but for my purposes I am assuming the legitimacy of both the current distribution of wealth and those currently lawful means by which people use private wealth to influence public discourse and politics. Instead, by skewed political outcomes, I mean an outcome in which a set or sets of preferences with less aggregate weight—as reflected by breadth and intensity, including intensity reflective, in part, of private wealth endowments—prevail over a competing set or sets of preferences with greater aggregate weight.

<sup>75</sup> As shorthand, I will refer to this group of industries as extractive industries. For my purposes the term industry includes individuals, groups, and firms that are part of or economically tied to an industry.

FIGURE TWO

	Transaction Costs of Political Organization	Political Structures	Political Outcomes
I	Favor Opponents of Natural Resource Preservation	Favor Opponents of Natural Resource Preservation	Bias Against Natural Resource Preservation
II	Favor Opponents of Natural Resource Preservation	Neutral	Bias Against Natural Resource Preservation
III	Favor Opponents of Natural Resource Preservation	Favor Proponents of Natural Resource Preservation	Indeterminate Whether Bias Present
IV	Neutral	Neutral	No Bias
V	Favor Proponents of Natural Resource Preservation	Favor Opponents of Natural Resource Preservation	Indeterminate Whether Bias Present
VI	Favor Proponents of Resource Preservation	Neutral	Bias in Favor of Natural Resource Preservation
VII	Favor Proponents of Resource Preservation	Favor Proponents of Resource Preservation	Bias in Favor of Natural Resource Preservation

My claim that the federal political process is skewed against natural resource preservation, if true, has two important implications for an assessment of the federal political process as a means of measuring the comparative weight of preferences for and against natural resource preservation. First, the absence of a political outcome supporting preservation of a given natural resource cannot be interpreted as proof that the weight of preferences in opposition to preservation is greater than the weight of preferences in support of preservation. Second, the emergence of a political outcome supporting preservation of a natural resource despite the transaction costs and political structures impediments strongly suggests that the preferences in support of preservation clearly outweigh the preferences in opposition to preservation.

The following Parts explore the transaction costs and political structures impediments facing proponents of natural resources preservation.

### 1. *Transaction Costs of Political Organization*

A central insight of public choice theory is that a group with low transaction costs of political organization sometimes can prevail over a group with high transaction costs even though the first group values the political outcome it attained less than the second group values the opposite political outcome.<sup>76</sup> Several characteristics of a group affect the magnitude of its transaction costs of political organization. First, it is harder to organize and extract contributions from a large group than a small one: all else being equal, the transaction costs of organization are also lower when the median stake of each individual group member is high,<sup>77</sup> and variance in stake among individual members is low.<sup>78</sup> Where each member has a great deal at stake in political victory, members are less inclined to free-ride because they will not want to risk that other members will not pick up the slack. Free-riding is also more difficult where each member has approximately the same individual stake because there is no room for confusion and debate about how much each member should contribute to the group effort. Large variance in members' stakes in political victory also can translate into disagreements about political advocacy and strategy, and such disagreements in and of themselves represent a kind of transaction cost. Finally, transaction costs of political organization, all else being equal, are lower when a group's members are geographically concentrated than when they are geographically dispersed.<sup>79</sup> Although the Internet and other communications advances have reduced the cost of long-distance communication, it remains true that it is less costly to spread information to, hold meetings and fundraisers with, and organize volunteer efforts among a group of people located in a few counties than it is among people strewn across a large nation.

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<sup>76</sup> See MANCUR OLSON, *LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* 48–49 (1971). For excellent overviews of public choice analysis, and some of its significant limitations, see Einer R. Elhauge, *Does Interest Group Theory Justify More Intrusive Judicial Review?*, 101 *YALE L.J.* 31, 32–44 (1991); DANIEL A. FARBER & PHILIP P. FRICKEY, *LAW AND PUBLIC CHOICE* (1991).

<sup>77</sup> See RUSSELL HARDIN, *COLLECTIVE ACTION* 38–49 (1982) (emphasizing the importance of the magnitude of the individual members' stakes).

<sup>78</sup> See OLSON, *supra* note 76, at 46 (arguing that although it is better, in terms of likelihood of success, for a group to have some members with large individual stakes than to have all of the members have small individual stakes, “those in the subset [with large individual stakes] will have an incentive to continue bargaining with the others in the group until the burden is widely shared, thereby adding to the expense of bargaining”); Elhauge, *supra* note 76, at 38 n.24 (citing OLSON, *supra* note 76, at 50 n.70) (explaining that the large member may sometimes fail to take action even when her share of the benefit exceeds her costs because of breakdowns in bargaining over sharing of the costs. However, it “seem[s] unlikely that all of the members of the group would go on making this mistake permanently”).

<sup>79</sup> See also Robert D. Tollison, *Rent Seeking: A Survey*, 35 *KYKLOS* 575, 590 (1982) (discussing organizational costs as analagous to start-up costs).

The group characteristics that lend themselves to low transaction costs of political organization—small group size, high median stakes per member, low variance in stake among members, and geographic concentration—better describe the opponents of federal preservation regulation than the proponents of such regulation. Consider the controversy surrounding the removal of mountaintops by mining companies in the “coal country” of southwestern West Virginia and eastern Kentucky. In mountaintop-removal mining, companies use explosives and other means to decapitate a mountain in order to reach coal deposits. The massive waste from the decapitation is typically dumped into an adjacent valley, often ending up in nearby streams.<sup>80</sup> Nearby residents suffer from the physical effects of the decapitation and dumping, and some of these residents, whom I will label “local environmentalists,” oppose the practice of mountaintop removal mining. Mountaintop-removal mining also permanently scars the countryside, degrades water quality, and endangers animal and plant populations.<sup>81</sup> Many environmentalists outside the coal areas, “distant environmentalists,” have long expressed a preference for limits on mountaintop-removal mining. The groups supporting continued mountaintop-removal mining include the coal companies, the mining unions, and virtually all elected officials at all levels of government in the affected states. Federal regulators have long resisted taking any legal actions against the mining industry.<sup>82</sup>

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<sup>80</sup> The waste is created in part by the fact that rock taken from its natural state swells by as much as 15 to 25% so that, at the end of a mountaintop removal, there is a greater volume of rock than previously existed. See *Bragg v. W. Va. Coal Ass'n*, 248 F.3d 275, 286 (4th Cir. 2001) (explaining the mining process in the context of a challenge to its legality).

<sup>81</sup> See, e.g., Penny Loeb, *Shear Madness*, U.S. NEWS & WORLD REP., Aug. 11, 1997, at 26 (describing environmentalists' concerns with “startling” changes in topography and “incalculable” impacts on wildlife, as well as the burdens borne by nearby residents in the form of cracked foundations, dust, fires, noise and disruption to drinking water supplies).

<sup>82</sup> This does not appear likely to change anytime soon. The Bush Administration has rejected any blanket restriction on the practice in favor of a case-by-case assessment approach that many environmentalists interpret as a means to permit the continuation of the practice. See *Agencies' Permitting Plans for Mountaintop Mining Raise Groups' Ire*, INSIDE EPA WKLY. REP., June 6, 2003, at 5.

In the mountaintop removal mining example, the coal industry appears to have “won” in the federal political process. Sometimes, however, as in the dispute over old-growth forests in the Pacific Northwest, industry may not prevail, or prevail only in part. Some critics of federal preservation regulation argue that environmentalists only prevail when they do because the interests of ordinary consumers are under-valued in the federal political process. See Zywicki, *supra* note 28, at 850 (arguing that environmental regulation “is a three-way struggle among industry, environmental interest groups, and dispersed consumers”). According to these critics, there are many consumers who would trade environmental goods such as forest preservation for even slightly lower prices on consumer goods, but these consumers face daunting transaction costs of political organization. However, if there were strong individual consumer sentiment against natural resource preservation, one would imagine that the leadership of the timber industry and other industries would realize as much and invest in the mobilization of ordinary citizens in their role as consumers. Ordinary consumers who want lower prices and less preservation do not have to organize themselves. In fact, we observe only sporadic, and not obviously successful, efforts by resource extraction industries to mobilize ordinary citizens as consumers in opposition to preservation regulation. See, e.g., Mitchell Pacelle, *Lumber Slump Undercuts Complaints by Builders*, WALL

This mountaintop-removal example illustrates several of the advantages, in terms of transaction costs of political organization, that opponents of natural resource extraction often enjoy relative to supporters of preservation. In one sense, the mountaintop removal controversy pits a large number of people in coal country concerned about the economic viability of coal mining against a large number of people in coal country concerned about mining's effects on their immediate environment and perhaps an even larger number of people outside coal country who have a preference for preservation (or at least, something less than decapitation) of the Appalachian countryside. In another sense, however, the key supporters of mountaintop-removal mining are very few in number—that is, the number of firms involved in coal mining is few—and hence easy to organize. These firms have substantial assets that their management and boards of directors can devote to politics without first needing to raise money from large numbers of individuals. They can influence the political process simply by donating large sums of money to key political candidates and political parties. In both the 2000 and 2002 federal election cycle, the coal mining industry made political contributions of over \$3.6 million.<sup>83</sup> In one recent election cycle, the CEO of the large coal firm AEI Industries, Inc. personally contributed over \$500,000 to candidates for federal office.<sup>84</sup>

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ST. J., June 28, 1993, at B1 (reporting on a national campaign of the housing industry to generate sentiment against timber restrictions on the grounds that these restrictions result in higher housing prices).

There are other reasons to doubt the existence of strong consumer sentiment against federal preservation efforts. Some politically powerful national consumer groups do exist, and these groups are generally supportive of, or neutral toward, federal preservation regulation. The website of the Consumers Union, for example, endorses eco-labeling, devotes substantial attention toward the advocacy of stricter controls on pesticides and agricultural wastes, and denounces proposals to commence drilling for oil in the Arctic National Refuge. See *Food Safety and Other Issues*, at [http://www.consumersunion.org/pub/core\\_food.html](http://www.consumersunion.org/pub/core_food.html) (last visited Mar. 22, 2004) (on file with the Harvard Environmental Law Review). Even the American Automobile Association, a group that opposes taxes or regulations that might increase gas prices and in that sense arguably is unsympathetic to the conventional environmentalist agenda, takes pains to emphasize its support for efforts to “protect the natural beauty of our great land.” See American Automobile Association Exchange, *Scenic Byways*, at <http://www.aaapublicaffairs.com/main.asp?SectionID=&SubCategoryID=39&CategoryID=8&ContentID=81&> (last visited Mar. 25, 2004) (on file with the Harvard Environmental Law Review). Moreover, the individual respondents to CV surveys who have reported that they would pay ten, twenty, even a hundred dollars per year to save a natural resource are also ordinary consumers; their responses are inconsistent with the claim that most consumers oppose or (if fully informed) would oppose natural resource preservation efforts that modestly increase the costs of consumer goods.

<sup>83</sup> See <http://www.opensecrets.org/industries/indus.asp?ind=E1210> (last visited Feb. 19, 2004) (on file with Harvard Environmental Law Review).

<sup>84</sup> See Eric Bates, Campaign Inflation, available at [http://motherjones.com/web\\_exclusives/special\\_reports/mojo\\_400/27\\_addington.html](http://motherjones.com/web_exclusives/special_reports/mojo_400/27_addington.html) (last visited Mar. 22, 2004) (on file with Harvard Environmental Law Review); See also Albert R. Hunt, *In Washington, The Spoils Go to the Big Contributors*, WALL ST. J., Dec. 18, 1997, at A23 (“Just this week, Common Cause noted that the timber companies gave more than \$8 million in soft money contributions to the Republican and Democratic Parties in 1995–96. Both the House and the Senate narrowly defeated measures to cut off federal spending for logging roads in

One might respond that the corollary to the coal firms is the environmental groups, which, at the federal level, are also few. But the environmental groups, unlike coal companies, do not own economically productive assets that allow them to generate revenue to be used for political purposes. Rather, environmental groups rely on fundraising, and primarily fundraising from individuals, an endeavor that unavoidably entails high transaction costs.<sup>85</sup> Moreover, the national environmental groups' principal strategy for influencing political outcomes has been the mobilization of broad public opinion—providing information to people about an issue, urging them to call their representatives, generating letter-writing campaigns—and that strategy necessarily entails high transaction costs.<sup>86</sup>

In two other respects—median stake per member and variance of stake among members—proponents of mountaintop-removal mining also enjoy a transaction cost advantage relative to opponents of the practice. The individuals in coal country who conceive of their entire economic fortunes as dependent on mountaintop-removal mining, and the mining firms themselves, all have a large stake in the outcome of the controversy. By contrast, the supporters of preservation are likely to have a wide range of individual stakes in the controversy. Among distant environmentalists, some may have slight individual stakes, some may have modest individual stakes, and a few may have large individual stakes. It is practically inconceivable that any of the distant environmentalists—or even any of the local environmentalists struggling with flooding and torrents of dust and debris in their communities—have an individual stake, in absolute dollar terms, that rivals the individual stake of any of the coal firms.

Last, the supporters of resource extraction—notably, the people in West Virginia and Kentucky tied to the coal mining industry and the firms themselves—are geographically concentrated, while supporters of preserva-

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national forests. The result was the norm in Washington today: . . . the campaign contributors made a sensational return on their investment”). Because of the inclusion of the coal firms in the group favoring continued mountaintop removal mining, that group qualifies, in public choice terminology, as a “privileged” group—a group with one or more members whose individual stake in the issues at hand is so large that those members rationally should take action even in the absence of any contributions by other members of the group. *See also* HARDIN, *supra* note 77, at 39–40 (discussing privileged groups).

<sup>85</sup> For an excellent overview of the challenges facing the national environmental groups, see Christopher J. Bosso, *The Color of Money: Environmental Groups and the Pathologies of Fundraising*, in INTEREST GROUP POLITICS (Allan J. Cigler & Burdett A. Loomis eds., 1995). Bosso notes that membership dues and individual contributions comprise over half of the annual revenues of the major environmental groups. *See id.* at 107. A number of prominent groups, such as Friends of the Earth and Defenders of Wildlife, received virtually all of the contributions from individuals. *Id.* at 108. Much of the fundraising from individuals is done by direct mail, and direct mail itself may consume as much as half of the revenue it generates. *See id.* at 111.

<sup>86</sup> For example, according to its 2003 annual report, Friends of the Earth spends forty-two percent of its total annual expenditures on public and membership education and outreach. *See* FRIENDS OF THE EARTH, 2003 ANNUAL REPORT, 13 (2003), <http://www.foe.org/ar.pdf> (last accessed Mar. 22, 2004).

tion are more dispersed.<sup>87</sup> Some of these supporters are concentrated where the mining occurs, but others—the distant environmentalists—may live thousands of miles away.<sup>88</sup>

## 2. *Political Structures*

In addition to the transaction costs of political organization, the structure of the federal political process favors extractive industries in their conflicts with supporters of federal preservation regulation. Political safeguards of federalism may not exist,<sup>89</sup> but political supports for extractive industries do.<sup>90</sup>

Geography is an organizing principle in the structure of the federal political process. The House of Representatives is organized by geography:

<sup>87</sup> In contrast to those industries that are opposed to federal preservation efforts and that are geographically concentrated around the particular sites of natural inputs they use for commodities production (as in ranching, with grazing lands) or the particular sites of the commodities they are removing from nature (as in oil, with underground oil fields), the construction and real estate development industries are not geographically concentrated. The construction and real estate development industries, however, enjoy the other transaction cost advantages outlined in this Section. As one indication of these advantages, consider the fact that, in the 2000 federal election cycle, campaign contributions from the construction industry totaled almost \$55,831,056, and, out of that total, more than \$7,339,287 was contributed by home builders alone. See Open Secrets, *Long-Term Contribution Trends*, at <http://www.opensecrets.org/industries/indus.asp?ind=C> (last visited Mar. 15, 2004) (on file with the Harvard Environmental Law Review), and <http://www.opensecrets.org/industries/indus.asp?ind=C02> (last visited Mar. 15, 2004) (on file with the Harvard Environmental Law Review).

<sup>88</sup> For a sub-category of resource preservation issues that involves very easy to explain, visually captivating resources such as bald eagles, the national media may play a significant role in reducing the organizational transaction costs of supporters and potential supporters of natural resource preservation spread across the country by providing free, informative coverage. Mountaintop-removal mining and many other issues, however, are not that appealing to media operations driven by commercial concerns to focus on stories that can be communicated in a matter of seconds and that are guaranteed to appeal to a broad audience. See NORMAN MILLER, *ENVIRONMENTAL POLITICS INTEREST GROUPS, THE MEDIA, AND THE MAKING OF POLICY* 58–59 (2002) (arguing that environmental subjects are unattractive to the media and disserved by the media because the media focuses on “the dramatic, the new, the bizarre, the timely, the local, and the glitzy” and avoids subjects, like many environmental subjects, that are “complicated”).

<sup>89</sup> According to the “political safeguards of federalism” thesis, certain structural features of the American political system protect the interests of the states vis-à-vis the federal government, and federal judicial protection of the states is therefore rarely, if ever, necessary. See, e.g., Larry D. Kramer, *Putting the Politics Back into the Political Safeguards of Federalism*, 100 COLUM. L. REV. 215, 216–31 (2000). Academics have grown increasingly skeptical toward this thesis, noting that some of the supposed safeguards, such as state legislatures’ selection of senators, no longer exist, and that the incentives for professional advancement of state bureaucrats and politicians may lead them to curry favor with federal bureaucrats and politicians, rather than protect their own turf. See, e.g., Marci A. Hamilton, *Why Federalism Must Be Enforced: A Response to Professor Kramer*, 46 VILL. L. REV. 1069, 1080–81 (2001).

<sup>90</sup> This argument regarding political structures does not extend to the construction and real estate development industries because they are not geographically concentrated. There is, however, no reason to think that federal political structures disfavor the real estate industry as compared to supporters of the preservation of natural resources.

each member represents a particular district within a state. The Senate's organizational principle is also geographic: each Senator represents a single state. The Presidency has a geographic component since (as the 2000 election reminded us) presidential elections turn on Electoral College results, and the Electoral College is organized by geography.

The geographic structure of federal legislative politics tends to result in the election of candidates who are committed to the positions of interest groups that are geographically concentrated within their district or state. Congressmen from corn and soybean districts invariably will make, must make, the interests of corn and soybean farmers a top priority. A member from a coastal district with large commercial fisheries must care about, and work hard to advance, the interests of commercial fishermen.<sup>91</sup>

The committee system in Congress enhances the ability of a geographically concentrated interest group to, in effect, elect House members and Senators who are not merely supportive or sympathetic, but truly devoted, to the interest group's agenda. Committees play a large role in screening which issues come to the Congress as a whole, and in framing those issues that do come to the Congress as a whole, and House members and Senators can seek membership and chair positions on committees and subcommittees that matter most to "their" interest groups. A group of House members or Senators deeply committed to an interest group's agenda and situated on the key committees can be instrumental to an interest group's success in Congress in securing or blocking substantive legislation, influencing appropriations, and guiding Congressional oversight of administrative agencies.<sup>92</sup>

As discussed previously, extractive industries tend to be more geographically concentrated than supporters of federal preservation regulation, and consequently, those industries enjoy disproportionate success in electing and re-electing a group of committed House members and Senators who seek to dominate the committees that matter most for issues of fed-

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<sup>91</sup> See, e.g., Suzanne Iudicello et al., *Putting Conservation into the Fishery Conservation and Management Act: The Public Interest in Magnuson Reauthorization*, 9 TUL. ENVTL. L.J. 339, 347 (1996) (criticizing Congressional acquiescence in the "'business as usual' of leaving national fishery policy to the few coastal members whose constituents make their living from the sea" and arguing that this practice "has resulted in special treatment" and "exclusive programs").

<sup>92</sup> Indeed, according to one of the prominent theories of Congressional committees, the principal reason such committees exist and wield power is to secure benefits for, and distribute benefits to, interest groups. See, e.g., Tim Groseclose & David King, *Committee Theories and Committee Institutions*, § 2.2, at <http://www.ksg.harvard.edu/prg/king/committ.htm> (last accessed Mar. 22, 2004) (on file with the Harvard Environmental Law Review) (reviewing the "distributive benefits theory" of committees, and explaining that "[o]ne important implication of distributive benefits theory . . . is that committees will be unrepresentative of the chamber. They will be *preference outliers*"); Barry R. Weingast & William Marshall, *The Industrial Organization of Congress, Or Why Legislatures, Like Firms, Are Not Organized as Markets*, 96 J. POL. ECON. 132 (1988) (adopting a distributive benefits approach in explaining Congressional committees).

eral preservation regulation.<sup>93</sup> Some congressional districts may be perceived as unusually “green,” but even in such districts voters may care about a wide range of environmental issues and not simply this or that particular natural resource, and they may care about many non-environmental issues as much as environmental ones. In a quintessentially “liberal” district in (for example) New York City or Cambridge, Massachusetts, support for the pro-choice position or increased public education funding may count as much as or more than one’s position on oil exploration in the Arctic National Wildlife Refuge.<sup>94</sup> Even in the greenest of districts, a member of Congress may well choose *not* to serve on an environmentally important committee,<sup>95</sup> and to instead make issues other than natural resource preservation the focus of her efforts as a legislator.

The geographic concentration of extractive industries is as significant in the Senate as in the House notwithstanding the fact that each Senator represents an entire state, and, in general, states embody more diverse viewpoints and interests than individual House districts. The reason this is so is that a number of the states that are home to extractive industries are small in population, if not size, and relatively non-diverse in economy. In such states, extractive industries are a dominant sector in the economy,

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<sup>93</sup> See John Londregan & James M. Snyder, Jr., *Comparing Committee and Floor Preferences*, in *POSITIVE THEORIES OF CONGRESSIONAL INSTITUTIONS* 155 (K. Shepsle & B. Weingast eds., 1995) (explaining that the committees with jurisdiction over public lands and natural resources contain “a disproportionate number of members from western states”). To pick just one example of disproportionate western representation, nine of the eighteen current members of the Subcommittee on Forests and Forest Health of the House Committee on Resources—and six of the eleven Republican members—represent districts in interior western states. The Republican chairman, like two other members of the committee, represents a district in Colorado.

<sup>94</sup> Moreover, a member of Congress can compile a good “environmentalist” record without being a consistent supporter of federal preservation regulation. The League of Conservation Voters (“LCV”) ratings for members of Congress—ratings that are often invoked in political campaigns—are based on a number of issues, ranging from toxins in the workplace to funding for Superfund cleanups to support for wetland protection. It is therefore possible for a House member or Senator to attain a very good rating from the LCV even if she makes one or more votes against resource preservation. Relatively few members receive perfect, 100% ratings. See, e.g., LCV, 2002 NATIONAL ENVIRONMENTAL SCORECARD 11, at <http://www.lcv.org> (last visited Mar. 22, 2004) (reporting that 30 members of the House received 100% and 57 received 0% ratings).

<sup>95</sup> The League of Conservation Voters’ comparison of the voting records of the Democrat and Republican leadership on five key committees for environmental issues suggests that extractive industries are more successful in securing ardent advocates on committees than are the proponents of natural resource preservation. At least for the years the League has made these comparisons (1997–2003), the committee leadership for both parties in the House and Senate scored lower on the League’s scorecard than their party’s respective averages. This suggests that the Republican committee leadership was more strongly supportive of extractive industries than Republican members as a group, and that Democratic committee leadership was less supportive of natural resource preservation than Democratic members as a group. See LEAGUE OF CONSERVATION VOTERS, 1997, 1998, 1999, 2000, 2001, 2002 NATIONAL ENVIRONMENTAL SCORECARDS, at <http://www.lcv.org> (last visited Mar. 22, 2004).

and hence politically powerful.<sup>96</sup> No Senator from North Dakota is ever likely to favor environmentalists over farmers in a conflict between the two groups; no Senator from Idaho or West Virginia is ever likely to compromise the interests of the mining industry; no Senator from Alaska would choose the side of preservationists in a conflict with the oil industry.<sup>97</sup>

For example, when the Clinton Administration sought to reform federal policy regarding grazing rights on federal land at the behest of environmental groups, western Senators from both political parties united in blocking the reform effort.<sup>98</sup> As Charles Davis, one of the leading scholars of federal public land and natural resource politics explains, “commodity-based programs” such as ranching on public lands “have traditionally benefited from a tightly knit coterie of supporters consisting of legislators serving on the Interior/Resource Committees of Congress, clientele groups, and land management agencies.”<sup>99</sup> Thus opposition in the Senate has also been fierce and substantially successful against environmentalists’ efforts to reform antiquated hard rock mining laws<sup>100</sup> and to curb federal subsidies for timber companies.<sup>101</sup> “[E]nduring localism,” George

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<sup>96</sup> The current composition of three Senate subcommittees with jurisdiction over environmental issues—the Interior Subcommittee of the Appropriations Committee, the Subcommittee on Public Lands and Forests of the Committee on Energy and Natural Resources, and the Subcommittee on Fisheries, Wildlife and Water of the Committee on Environment and Public Works—suggests the dominance of extractive industries in certain low-population states. All three subcommittees are chaired by pro-development Republicans from low-population western states. Sixteen of the twenty-one Republican Senators on the three subcommittees hail from western or plains states. Nine of the eighteen Democrats on the three subcommittees hail from western or plains states. At least one Senator from Alaska, Colorado, and Montana serves on each subcommittee. See *Committee Assignments*, at [http://www.senate.gov/general/committee\\_assignments/assignments.htm](http://www.senate.gov/general/committee_assignments/assignments.htm) (last visited Feb. 29, 2004) (on file with the Harvard Environmental Law Review).

<sup>97</sup> Even a presidential candidate or sitting President may take upon herself a significant risk in going against the interest of an extractive industry concentrated and hence dominant in a low-population state. Because of the formula for electoral votes, whereby each state receives votes equal to its number of Senators and House members, low-population states have influence in the Electoral College out of proportion with their populations. For example, Gore’s environmentalist reputation may well have cost him victory in West Virginia, a low-population state dominated by the coal industry, and thereby cost him the election. See George Lobsenz, *Lieberman Energy Plan Backs Kyoto “Process,” But Not Kyoto Protocol*, WHITE HOUSE WKLY., May 13, 2003 (reporting that “[c]oncerns over former Vice President Gore’s climate change policies and their effect on coal clearly played a role in Bush’s victory” in West Virginia).

<sup>98</sup> See Tom Melling, *Bruce Babbitt’s Use of Governmental Dispute Resolution: A Mid-Term Report Card*, 30 LAND & WATER L. REV. 57, 73–79 (1995) (describing the Clinton Administration’s inability to secure passage of grazing reforms); John H. Cushman, *Administration Gives Up on Raising Grazing Fees*, N.Y. TIMES, Dec. 22, 1994, at B12 (noting that “Western Democrats were able to stymie the Administration’s efforts”).

<sup>99</sup> Charles Davis, *Public Lands and Policy Change*, in WESTERN PUBLIC LANDS AND ENVIRONMENTAL POLITICS, 253, 259 (Charles Davis ed., 2001).

<sup>100</sup> See George Hoberg, *The Emerging Triumph of Ecosystem Management: The Transformation of Federal Forest Policy*, in WESTERN PUBLIC LANDS AND ENVIRONMENTAL POLITICS, *supra* note 99, at 55.

<sup>101</sup> See John D. Leshy, *Mining Law Reform Redux, Once More*, 42 NAT. RESOURCES J. 461, 475–85 (2002) (describing legislative opposition to Clinton Administration reforms

Hoberg observes, “continues to influence congressional forest politics.”<sup>102</sup>

In sum, despite claims that legislative support for extractive industries is waning somewhat because of a weakening of the Committee system<sup>103</sup> and greater economic and political diversity in some interior western states, recent voting on issues that divide environmentalists and extractive industries confirms that “the longstanding link between commodity production and legislative support is still valid.”<sup>104</sup> For now and for the immediate future at least, federal political structures favor extractive industries in their conflicts with proponents of natural resource preservation.

#### V. LEGITIMACY OBJECTIONS TO EXISTENCE-VALUE REGULATION

Even if existence values are reasonably measurable, they arguably should not be included in public policy decision-making if doing so would violate one or more principles that legitimate federal government action. The current literature suggests that the use of existence values as a rationale for federal preservation regulation is in tension with two such legitimating principles: the principle of respect for private property rights, and the principle of distributive justice among communities. As explained below, however, these principles do not support the wholesale rejection of existence value concerns as a basis of federal preservation regulation.

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and the Bush Administration’s reversal of the positions taken by the Clinton Administration); Randy Hubbard, 17 *WATER NAT. RESOURCES & ENV’T* 149, 150–87 (2003) (describing the same legislative defeats for the Clinton Administration).

<sup>102</sup> See Hoberg, *supra* note 100, at 80. See also Robert W. Hahn et al., *Environmental Regulation in the 1990s: A Retrospective Analysis*, 27 *HARV. ENVTL. L. REV.* 377, 407–09 (2003) (noting the pattern during the 1990s of Congressional support for extensive subsidies for grazing, timber extraction, and mining, and explaining that “[w]hen the ‘winners’ from a natural resource management policy are American citizens as a whole and the ‘losers’ are identifiable members of particular Congressional districts, members of Congress are reluctant to impose those losses on their own district or a colleague’s district”).

<sup>103</sup> See, e.g., Gerald B. H. Solomon & Donald R. Wolfensberger, *The Decline of Deliberative Democracy in the House and Proposals for Reform*, 31 *HARV. J. ON LEGIS.* 321, 350 (1994) (arguing that Congress has “circumvented the committee system”). But see J. R. DeShazo & Jody Freeman, *The Congressional Competition to Control Delegated Power*, 81 *TEX. L. REV.* 1443, 1501 (2003) (concluding that “there is no reason to believe, either as a theoretical or empirical matter, that a majority of Congress perfectly controls committees . . . . This divergence between the majority of Congress and the committees to which it delegates power represents another break in the chain of accountability between Congress and administrative agencies.”).

<sup>104</sup> Davis, *supra* note 99, at 257 (explaining that “U.S. lawmakers in the West, particularly those located in the interior West, tend to support developmental activities over environmental concerns—regardless of party affiliation”).

*A. Property Rights*

Property rights concerns certainly are implicated by federal preservation regulation. In some cases, those concerns may even be strong enough to raise questions about the constitutionality of uncompensated regulation. But federal preservation regulation, as a distinct category of regulation, does not implicate property rights concerns any more strongly than many other categories of federal, state and local regulation.

As an initial matter, it is important to recognize that much of the land that is at issue in debates over preservation and resource extraction is owned by the federal government.<sup>105</sup> It is true that non-federal entities and individuals often have leases and other contracts that permit them to alter the natural landscape on federal land. In the interest of natural preservation, the federal government might choose (and sometimes has chosen) not to renew leases, to renew leases only with modifications, or to take advantage of cancellation provisions within leases. However, none of these actions violate the lease terms, and hence none deprives non-federal actors of contract and/or property rights.

With respect to regulation of privately held land, our constitutional tradition has a well-established focal point for arguments to the effect that preferences expressed through the federal political process should not hold sway when they do too much violence to property rights, and that focal point is the Takings Clause. The Takings Clause prohibits takings of property for public use without just compensation. As long as a regulation is for public use, the Takings Clause does not prohibit regulation *per se*, but rather specifies that compensation must accompany the regulation. Thus, to the extent that the objection to federal preservation regulation is rooted in conceptions of property rights, the objection should be framed as a Takings Clause (as opposed to a Commerce Clause) objection, and as an objection to the absence of compensation rather than to the subject matter of the regulation itself.

In our constitutional tradition concerning property rights, as reflected by our Takings Clause jurisprudence, federal preservation regulation, at least in most cases, is permissible without any compensation for affected landowners. Very few regulations of any sort are ever deemed takings without just compensation: our courts, at both the federal and state level, have largely left to legislatures the question of how best to balance private prop-

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<sup>105</sup> There have been periodic calls, mostly by Westerners, and in particular by Westerners frustrated by federal environmental regulations, for the transfer of federal lands to states and localities, but even these calls proceed on the basis of the recognition that the lands in question are *public* lands. See R. MCGREGGOR CAWLEY, *FEDERAL LAND, WESTERN ANGER: THE SAGEBRUSH REBELLION AND ENVIRONMENTAL POLITICS*, ix (1993) (tracing the Sagebrush Rebellion against federal control of federal lands, which entailed state and county assertions of jurisdiction over federal land and which was "a protest against the growth of environmental regulation . . . orchestrated by various public land users in pursuing commodity development activities such as grazing and mining").

erty concerns, societal needs, and property owners' societal obligations.<sup>106</sup> In its Takings Clause jurisprudence, the United States Supreme Court has suggested that whether a regulation effects a taking without just compensation depends (at least in part) on the economic impact of the regulation on the relevant property interest (as measured by the extent to which the regulation diminishes the value of the property interest) and the degree to which the regulation offends entrenched, crystallized expectations on the part of the property owner as to what constitutes an acceptable land use.<sup>107</sup> Neither of these factors—diminution in value or crystallization of expectations—supports the view that, as a categorical matter, federal preservation regulation without compensation violates the Takings Clause.<sup>108</sup>

The diminution-in-value inquiry in takings cases is highly fact-specific. This is as true in the context of federal preservation regulation as it is in other contexts. Some preservation regulation does have very significant adverse impacts on the market value of discrete property interests, but the impacts more often are modest. This is no accident. In deference to private property rights and economic productivity concerns, out of a desire not to invite successful Takings Clause suits, and (most importantly perhaps) in keeping with the considerable political power of private property owners (and the resource extraction and development industries generally), federal preservation regulation aimed at private land holdings typically embodies substantial balancing of environmental/existence value and private property/economic concerns. In the wetlands permitting contexts, as noted above, most permits are granted (albeit often with some conditions).<sup>109</sup> Negotiated habitat conservation plans (HCP) adopted pursuant to Section 10 of the ESA—the focus of federal implementation of the ESA

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<sup>106</sup> On Takings Clause jurisprudence generally, see DAVID A. DANA & THOMAS W. MERRILL, *TAKINGS* (2002). For an argument that courts are correct in leaving compensation questions to the political process in the absence of indicia of distortions in that process, see William M. Treanor, *The Original Understanding of the Takings Clause and the Political Process*, 95 COLUM. L. REV. 782 (1995).

<sup>107</sup> See *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003 (1992).

<sup>108</sup> It might be sensible for some institution of government to provide a measure of compensation to landowners affected by regulations even if the regulations do not constitute takings, and in that sense are legitimate even in the absence of the payment of any compensation. For example, I have previously argued that some ex ante or ex post compensation for leaving habitat in its natural state may be justified as a means of preventing property owners from accelerating development in order to avoid possible future preservation regulation. See David A. Dana, *Natural Preservation and the Race to Develop*, 143 U. PA. L. REV. 655 (1995). See also Barton H. Thompson, Jr., *The Endangered Species Act: A Case Study in Takings & Incentives*, 49 STAN. L. REV. 305, 349 (1997) (arguing that the absence of compensation can skew landowners' investment incentives).

<sup>109</sup> Similarly, almost all formal consultations with the Fish and Wildlife Service regarding species protection issues result in permission for projects to proceed, although, once again, the permission is often conditional. See EDWARD O. WILSON, *THE FUTURE OF LIFE* 187 (2002) (arguing that the Endangered Species Act enhances property values by increasing environmental amenities and recreational opportunities, and reporting that between 1987 and 1992, only 55 out of 98,237 projects were "stopped cold by application of the Endangered Species Act").

on private land—are designed to achieve substantial ecosystem protection while moderating the adverse impacts on private property owners. Under the HCP approach, property owners are allowed to pursue relatively unregulated development on parcels or sections of parcels that would result in high economic return as a quid pro quo for their willingness to make land concessions and other financial commitments that aid the overall preservation effort.<sup>110</sup>

With respect to the question of the crystallization of private property owners' expectations regarding their entitlement to engage in natural resource degradation and/or destruction, one relevant factor, certainly, is the background legal norms regarding the content of the societal obligations that are embedded in private property ownership. The notion that private property rights may be limited to some extent by a societal interest in preserving nature—and in particular what is rare, irreplaceable, and/or integral to the overall functioning of natural systems—is not a novel idea in the American legal tradition, even if it remains a highly contested one. More than fifty years ago, the Wisconsin Supreme Court in *Just v. Marinette County*, in the context of rejecting a constitutional challenge to a shoreline zoning ordinance, asked “[i]s the ownership of a parcel of land so absolute that man can change its nature to suit any of his purposes[,]” and answered that “[a]n owner of land has no absolute and unlimited right to change the essential natural character of his land so as to use it for a purpose for which it was unsuited in its natural state and which injures the rights of others.”<sup>111</sup> There is also a long legal history of courts upholding restrictions on private landholders' rights to harm wildlife on their land.<sup>112</sup>

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<sup>110</sup> Indeed, some environmental groups are critical of HCPs negotiated during the Clinton Administration on the ground that the plans accommodate the interests of property owners to an excessive degree. See Laura C. Hood, *Frayed Safety Nets: Conservation Planning Under the Endangered Species Act*, at <http://www.defenders.org/pubs/hcp08> (last visited Mar. 23, 2004) (on file with the Harvard Environmental Law Review).

<sup>111</sup> *Just v. Marinette Co.*, 201 N.W.2d 761, 768 (Wis. 1972). Joseph Sax suggests that Justice Scalia's opinion for the Court in *Lucas v. South Carolina Coastal Council*, holding that South Carolina's prohibitions on beachfront construction almost certainly are unconstitutional, “repudiates the conclusion of *Just*, and . . . effectively reverses the Wisconsin court's conclusion that ‘it is not an unreasonable exercise of [police] power to prevent harm to public rights by limiting the use of private property to its natural uses.’” Joseph L. Sax, *Property Rights and the Economy of Nature: Understanding Lucas v. South Carolina Coastal Council*, 45 STAN. L. REV. 1433, 1440 (1993) (quoting *Just*, 201 N.W.2d at 768). If Justice Scalia's opinion in *Lucas* represents a repudiation of *Just*, then arguably Justice Stevens's opinion for the Court in *Lake Tahoe* represents something approaching a repudiation of *Lucas* and a re-affirmation of *Just*. See *Tahoe-Sierra Pres. Council v. Tahoe Reg'l Planning Agency*, 535 U.S. 302, 332 (2002) (rejecting claims that a moratorium on development in the Lake Tahoe area constituted a *per se* taking, and limiting the holding in *Lucas* to the “extraordinary case in which a regulation permanently deprives property of all value”). The bounds of government's authority to require land to be left in its natural state without providing compensation has been a matter of debate and discussion within the courts for a long time.

<sup>112</sup> See Thompson, *supra* note 108, at 335. As Thompson explains, the older common law precedents relate to the government's authority to prevent the outright killing or trapping of wildlife, as opposed to restrictions on the destruction of the habitat for wildlife.

Of course, the balance struck between private interest and social obligation in our takings jurisprudence may be wrong. One can plausibly argue that Penn Central should have been compensated when it was denied the right by a city landmark commission to build an office building in its airspace,<sup>113</sup> or that Keystone Bituminous should have been compensated when it was prevented by state statute from engaging in mining that could have caused surface subsidence.<sup>114</sup> Perhaps, as Richard Epstein powerfully argues, every zoning regulation without compensation that is not a narrowly tailored response to a common law nuisance should be deemed a taking.<sup>115</sup> Under a new, much more vigorous conception of the Takings Clause, federal preservation regulation without compensation generally would violate the Takings Clause, and in that sense would be illegitimate. But under such a conception, all sorts of other federal regulation, and an even more extensive body of state and local regulation, also would violate the Takings Clause. The property rights argument against uncompensated federal preservation regulation, properly understood, is in essence an argument against uncompensated government regulation altogether.

### *B. Distributive Justice Among Communities*

The property rights objection to federal preservation regulation can be understood as a kind of distributive justice claim focused on the justice (or injustice) of the distribution of societal benefits and burdens as between the property owner and the rest of society. There is a second, less well-defined distributive justice argument suggested by critics of federal preservation regulation: that such regulation results in an unfair, unjust distribution of societal burdens as between distinct local communities that are economically dependent on resource extraction (timber towns, fishing villages, coal mining counties) and the rest of the nation. This argument accounts for the fact that some of the individuals and families who may be most affected by preservation regulation's restrictions on

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One could argue, however, that the larger principle embedded in this case law is that the government's interest in protecting wildlife for government or societal purposes trumps the interests of private property owners in autonomy and freedom of action on their land. See Oliver A. Houck, *Why Do We Protect Endangered Species, and What Does That Say About Whether Restrictions on Private Property to Protect Constitute "Takings"?*, 80 IOWA L. REV. 297, 317 (1998) (concluding that "wildlife law in America developed from a concept of common ownership of the wildlife resources").

<sup>113</sup> See *Penn Cent. Transp. Co. v. City of New York*, 438 U.S. 104 (1978) (holding that landmark designation and denial of permission to construct an office tower did not constitute a taking).

<sup>114</sup> See *Keystone Bituminous Coal Ass'n v. DeBenedictis*, 480 U.S. 470 (1987) (rejecting takings challenge to Pennsylvania's anti-subsidence statute).

<sup>115</sup> See Richard A. Epstein, *Lucas v. South Carolina Coastal Council: A Tangled Web of Expectations*, 45 STAN. L. REV. 1369, 1391 (1993) (arguing that "[s]etting the rights in favor of the landowner makes eminently good sense" and that "[i]n the few cases where public intervention is necessary, the purchase can easily be arranged").

economic activity are not the owners of enterprises involved in resource extraction, but rather workers—the people who harvest trees or work as crews in fishing boats, for example—and the members of the social networks to which these workers belong.<sup>116</sup> According to this argument, federal preservation regulation based on existence value concerns is distributively unjust—and hence illegitimate—because it increases the well-being of the nation as a whole (and, it is claimed, upper-middle-class environmentalists in particular) at the expense of relatively poor communities that are economically dependent on resource extraction.

This illegitimacy argument is in a sense the mirror image of the environmental justice/locally unwanted land use (“LULU”) argument that has garnered so much attention from legal academics and policymakers in the last fifteen years.<sup>117</sup> The LULU argument, in essence, is that it is distributively unjust that some communities (because of poverty, race/ethnicity, lack of political clout, or all three) are burdened by a disproportionate share of locally unwanted land uses such as hazardous waste dumps and incinerators. Federal preservation regulation can be conceptualized as creating the opposites of LULUs; whereas the land uses in the LULU setting are unwanted locally but wanted at the state or national level, the land uses at issue in federal preservation regulation are (sometimes, at least) wanted locally but unwanted at the national level. For ease of presentation, I will refer to uses that are locally wanted but nationally unwanted as nationally unwanted land uses or “NULUs.”

The NULU distributive justice argument suffers from all the complexities and difficulties that have been well articulated with respect to the LULU distributive justice argument. First, it is hard to define what precisely is or is not a “community” for purposes of considering distributive justice among communities.<sup>118</sup> Is it the same thing as a municipality or

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<sup>116</sup> How adversely preservation regulations affect working people is a subject of some dispute. In the Pacific Northwest, for example, there is some evidence that, overall, the economies in “timber counties” have flourished despite restrictions on harvesting of old growth trees. See Thomas M. Power, *Preserving Washington’s Roadless Forests*, ch. 2, at 6–7 (Jan. 2002), at [www.ems.org/roadless\\_areas/chapter2.pdf](http://www.ems.org/roadless_areas/chapter2.pdf) (explaining that even the “relatively isolated” timber counties in Washington have gained in population and done “almost as well” economically as Washington’s other counties) (last visited Mar. 26, 2004) (on file with the Harvard Environmental Law Review). Moreover, some of the decline in timber jobs that has occurred may be part of a dynamic of unsustainable husbandry that pre-dated, and cannot be attributed to, harvesting restrictions.

<sup>117</sup> See, e.g., Sheila Foster, *Justice from the Ground Up: Distributive Inequities, Grassroots Resistance, and the Transformative Politics of the Environmental Justice Movement*, 86 CAL. L. REV. 775 (1998); Richard J. Lazarus, *Pursuing “Environmental Justice” The Distributional Effects of Environmental Protection*, 87 NW. U. L. REV. 787 (1992); Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 11, 1994).

<sup>118</sup> See Robert R. Kuehn, *A Taxonomy of Environmental Justice*, 30 ENVTL. L. REP. (Envtl. L. Inst.) 10681, 10688 (2000) (noting the lack of consensus regarding a definition of the “affected community” or “reference community” in the context of environmental justice); see also GERALD FRUG, *CITY MAKING: BUILDING COMMUNITIES WITHOUT BUILDING WALLS* 102 (1999) (discussing the complexities of who “counts” as a member of a neighborhood, and noting that “[e]ven the definition of a neighborhood is contestable”).

county? If not, to be a community, does the area have to have some shared characteristics other than opposition to a LULU or support for a NULU? How does one deal with the fact that sentiment even among the immediate neighbors to a LULU or NULU is often far from uniform?

Second, there is no constitutional jurisprudence available to frame either the LULU or NULU distributive justice arguments. In the LULU setting, advocates have sometimes framed the distributive justice argument as a racial discrimination argument, but intentional and hence unconstitutional race discrimination is very difficult to establish as the cause of the concentration of LULUs.<sup>119</sup> In the NULU context, there presumably would be no constitutional mooring whatever for the distributive justice argument.

Third, there are many plausible conceptions of distributive justice, and each could lead to different conclusions as to whether there are too many LULUs in any particular community, or whether any particular community was suffering too much from regulations restricting NULUs.<sup>120</sup> Distributive justice could mean equality of outcomes among communities, but that goal so far deviates from actual practice that it may not be worth serious consideration. Distributive justice instead could mean guarantees of minimal safety and well-being for every community and/or household but not necessarily equality of outcomes; in that case, some sort of criterion as to what constitutes a minimal threshold in different contexts would be necessary. Distributive justice also could mean the provision of compensation for the imposition by the government of a new burden on a community,<sup>121</sup> but compensation for a new burden only makes sense if there is a way to verify the recipients of the new burden had not previously been receiving a disproportionately great share of government benefits.<sup>122</sup> Moreover, the admin-

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<sup>119</sup> See *R.I.S.E., Inc. v. Kay*, 768 F. Supp. 1144, 1150 (E.D. Va. 1991) (rejecting a constitutional challenge to the siting of a landfill in a predominantly African American community on the ground that “the Equal Protection Clause does not impose an affirmative duty to equalize the impact of official decisions on different racial groups”); *Bean v. S.W. Waste Mgmt. Corp.*, 482 F. Supp. 673 (S.D. Tex. 1979) (refusing to grant a preliminary injunction in a challenge to the siting of a solid waste disposal facility).

<sup>120</sup> See Kuehn, *supra* note 118, at 10688 (explaining that “there is no consensus on what would be a fair way to address the inequities, with proposals ranging from doing nothing, to ensuring compensation for affected communities, to banning activities that would add to the disparity.”); Vicki Been, *What’s Fairness Got to Do With It? Environmental Justice and the Siting of Locally Undesirable Land Uses*, 78 CORNELL L. REV. 1001, 1027 (arguing that the environmental justice movement has not been grounded on a coherent conception of fairness, and exploring possible conceptions).

<sup>121</sup> For example, the Clinton Northwest Timber Plan and the 1990 Clean Air Act Amendments, both of which were expected to have adverse economic impacts on communities dependent on resource extraction, included substantial compensation in the form of transitional and retraining assistance. See PIPKIN *supra* note 28, at 17–18 (discussing Northwest Economic Adjustment Initiative); Clean Air Employment Transition Assistance, 29 U.S.C. § 1662(a)–1662(e) (repealed 1998).

<sup>122</sup> For example, many jobs in extractive industries probably would have disappeared long ago had the industries not been receiving large federal subsidies, so in that sense, communities dependent on resource extraction arguably have been beneficiaries of unusu-

istrative expense of compensating every community that has been disproportionately burdened by government actions (or government failures to act) would be prohibitive. A practical compensation approach would require some criteria for differentiating those disproportionately burdened communities that will receive compensation from those that will not receive compensation. Alternatively, distributive justice could mean whatever distribution is produced by a free market,<sup>123</sup> but the normative grounds for equating the free market with a distributively just society are highly contested. Moreover, no market is or could function free of government involvement, and, in the federal preservation/NULU context, the federal government is a crucial actor within the relevant markets if only because it owns much of the land at issue.

My point is not that distributive justice concerns (or property rights concerns) are irrelevant to normative assessments of federal preservation regulation—they no doubt are, to some degree. My claim is much more limited: distributive justice concerns (like property rights concerns) do not straightforwardly render illegitimate either existence value preferences, as a category of preferences, or federal regulation premised on existence value concerns, as a category of regulation.

#### VI. THE IMPLICATIONS FOR LEGAL DOCTRINE OF THE NORMATIVE DEFENSE OF EXISTENCE VALUE REGULATION

If one accepts the preceding normative defense of federal regulations premised on existence-value concerns, then one must recognize that legal doctrines that would invalidate or weaken the impact of such regulations are, at the very least, problematic. One approach to the Commerce Clause—best exemplified by opinions authored by Judge Wilkinson of the Fourth Circuit and Judge Wald of the District of Columbia Circuit—allocates to the opponents of regulation the burden of proving that the destruction of a natural resource will have no interstate commercial effects, and also defines interstate commercial effects broadly to include effects traceable to all of the sites that have or could be regulated under the statute or federal program at issue. This Wilkinson/Wald approach leaves ample room for courts to uphold regulations premised on existence-value concerns. Another approach to Commerce Clause doctrine—an approach best exemplified by opinions authored by Judges Luttig and Sentelle, also of the Fourth and District of Columbia Circuits—allocates to the proponents of regulation the burden of proving that there will be interstate commercial effects, and also defines interstate commercial effects narrowly to include

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ally great government support.

<sup>123</sup> See Lynn E. Blais, *Environmental Racism Reconsidered*, 75 N.C. L. REV. 75, 143–51 (1996) (questioning the normative rationale for selectively interfering with market distributions of environmental amenities and risks, and suggesting that such intervention will not benefit low-income people).

only those effects that are traceable to the particular site or sites at issue in the litigation. The Luttig/Sentelle approach leaves much less room, and perhaps no room, for courts to uphold preservation regulations premised on existence-value concerns. A somewhat comparable divide exists in the law of standing. This Part explores the competing strands of Commerce Clause and standing doctrine through the prism of the preceding normative defense of federal regulation premised on existence-value concerns.

### A. *The Commerce Clause*

The text of the Constitution empowers Congress to regulate commerce among the several states.<sup>124</sup> Without adopting what anyone would consider a truly textual approach,<sup>125</sup> the United States Supreme Court has shown some fealty to the terms of the Commerce Clause by tying Congress's jurisdiction under the Commerce Power to the presence of interstate commercial effects. For many years, the requirement of interstate commercial effects probably served as nothing more than a symbolic gesture of respect for the notion that the federal government is one of enumerated, and not plenary, powers. The Court's recent holdings that Congress exceeded its power under the Commerce Clause in enacting the Gun Free School Zones Act<sup>126</sup> and the Violence Against Women Act,<sup>127</sup> however, suggest that the requirement of interstate commercial effects now has practical as well as symbolic significance.

Because current judicial doctrine singles out only interstate commercial effects as a basis for federal jurisdiction under the Commerce Clause, it precludes judicial validation of federal regulation on overt existence-value grounds.<sup>128</sup> The reason for this is straightforward: interstate losses in ex-

<sup>124</sup> U.S. Const. art. I, § 8, cl. 3.

<sup>125</sup> See, e.g., Bruce Ackerman, *Levels of Generality in Constitutional Interpretation: Liberating Abstraction*, 59 U. CHI. L. REV. 317, 347 (1992) (arguing that "the explicit text [of the Commerce Clause], if particularistically interpreted, only covers cases involving relatively straightforward, market relationships" and that "modern constitutional law has permitted modern government to reinterpret its fundamental purposes in ways that undoubtedly would have surprised the Founding generation"); Gary Lawson, *The Rise and Rise of the Administrative State*, 107 HARV. L. REV. 1231, 1231 and 1234 (1994) (arguing that "[t]he post-New Deal administrative state is unconstitutional" and that "[t]he Commerce Clause clearly leaves outside the national government's jurisdiction such important matters as manufacturing (which is an activity distinct from commerce), the terms, formation, and execution of contracts that cover subjects other than the interstate shipments of goods, and commerce within a state's boundaries").

<sup>126</sup> *United States v. Lopez*, 514 U.S. 549 (1995).

<sup>127</sup> *United States v. Morrison*, 529 U.S. 598 (2000).

<sup>128</sup> Under *Lopez*, the Commerce Power authorizes Congress to do three things: regulate the use of the channels of interstate commerce, regulate or protect the instrumentalities of interstate commerce, and "regulate those activities having a substantial relation to interstate commerce." 514 U.S. at 558–59. Since most federal preservation regulation can be justified under the channel or instrumentalities prongs of *Lopez* only with great intellectual gymnastics, challenges to preservation regulation are likely turn on the absence or presence of a substantial relation to interstate commerce. *But see* Nat'l Ass'n of Home Builders

istence value never predictably result in—or at least never have been thought to predictably result in—discernible effects on interstate commerce. If prairie potholes in the Dakotas are destroyed by the deposit of fill matter, or pristine patches of the arctic tundra are damaged by oil exploration, and self-identified environmentalists in Maryland, California, and Florida experience a loss in existence value, there are no resulting interstate commercial effects. As far as we know, when people lose a sense of well-being from the knowledge that a natural resource no longer exists, they do not change patterns of investment, consumption or other behavior in a way that discernibly affects interstate commerce.<sup>129</sup>

In the policymaking setting, the possible interstate effects of the destruction of a natural resource typically are assessed, if at all, *before* the decision is made to allow the destruction of the resource.<sup>130</sup> In practice, therefore, a legal test that ties the permissibility of federal regulation to the existence of interstate commercial effects requires some sort of as-

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v. Babbitt, 130 F.3d 1041, 1046–49 (D.C. Cir. 1997) (offering the channels of commerce as an alternative ground for upholding the constitutionality of regulation of the habitat of an endangered fly).

<sup>129</sup> See Paul R. Portney, *The Contingent Valuation Debate: Why Economists Should Care*, J. ECON. PERSP., Fall 1994, at 3, 14 (1994) (explaining that “[s]ome environmental benefits can be measured in indirect ways. For example, the benefits of air quality improvements can manifest themselves in residential property values; enhanced workplace health and safety may be reflected in wage rates . . . . But there is simply no behavioral trace through which economists can glean information about lost existence values”). The requirement of interstate commercial effects as a basis for federal jurisdiction, if applied in earnest, could be problematic even for regulation premised on concerns about physical spillovers across state boundaries. Sometimes physical spillovers across state lines result in discernible interstate commercial effects: if, for example, water pollution from State A migrates to State B and contaminates big commercial farms there, then there would be a discernible interstate commercial effect, in the form of less farm product harvested in State B and sold into the interstate market for farm products. But interstate spillovers sometimes do not translate into any discernible effects on commerce. If the water pollution from State A results only in the contamination of drinking water in State B, such that the risks of certain non-life-threatening ailments among State B water drinkers increase somewhat, then it might be difficult to identify a discernible health effect from the spillover; even if that were possible, the question would remain how that health effect would translate, if at all, into an effect on interstate commerce. As Justice Breyer hinted at during the oral argument in *SWANCC*, a reinvigorated reading of the Commerce Clause conceivably could preclude federal intervention even to prevent human deaths from a spillover because even this impact might lack a discernible effect on interstate commerce. Transcript of Oral Argument at 20–23, *Solid Waste Agency of N. Cook Co. v. U.S. Army Corps of Engineers*, Oct. 21, 2000 (No. 99-1178), available at <http://www.supremecourtus.gov/> (last visited Mar. 22, 2004).

<sup>130</sup> By their very nature, natural resources are hard and sometimes impossible to reconstruct once they have been destroyed. Once a wetland area along a bay has been covered with cement and hundreds of houses and apartment buildings constructed, the likelihood that the government will seek to have the area restored to its pristine state is virtually nil. Even if the government were to order restoration, the project might not be technologically feasible. The same point applies to endangered species habitat and even more starkly to endangered species themselves: once the population of a species disappears, that species presumably is gone for all time. See generally Dana, *supra* note 108, at 684–86 (discussing possible reasons for the norm in land use and environmental law that existing structures are allowed to remain standing even when comparable new structures are banned).

assessment of the reliability of the *predictions* that there will be or will not be interstate commercial effects. A legal regime could allocate the burden of proof<sup>131</sup> regarding the reliability of such predictions to either to the proponents or opponents of natural preservation regulation. That allocation decision is likely to be outcome determinative where the relevant time frame is the long term. With respect to the distant future, there generally will be considerable doubt about *both* predictions of adverse effects on interstate commerce from natural resource destruction *and* predictions of the absence of such effects. Both proponents and opponents of regulation will be required to rely on speculations, and in a battle of speculations, the side with the burden of proof loses, or at least is supposed to lose.<sup>132</sup>

Consider the question of whether a salmon population annually harvested in a river in State *B* will be harmed by increased pollution of that river upstream in State *A*. It might be possible to conduct short-term studies that simulate the proposed increase in pollution,<sup>133</sup> and the studies might suggest the pollution will or will not have an adverse effect on the salmon population. Long-term studies, however, are probably impossible to conduct before the decision to allow or not allow the increased pollution. The absence of such studies would make it very difficult to predict reliably whether the salmon population will decline in the long-term, even if it remains steady in the short-term, or whether the population instead will dip in the short-term but then return to pre-diversion levels after the salmon adjust to the new environmental conditions.

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<sup>131</sup> By burden of proof in this context, I mean the de facto or as-actually-applied burden of proof. As a formal matter, the party challenging the constitutionality of a statute or regulation bears the burden of proof. *See* *United States v. Morrison*, 529 U.S. 598, 607 and 627 (2000) (holding that federal statutes carry a “presumption of constitutionality” when challenged in court but then proceeding to reject as insufficient the extensive evidence and findings compiled by Congress in support of the constitutionality of the Violence Against Women Act).

<sup>132</sup> For example, whoever has the burden of proof regarding the future medicinal value of a species’s genetic material should prevail, because there is no way to establish that a species will prove to be the source of advances in medicine, and there is no way to disprove that claim either. Even for species that have been extensively studied, the possibility remains that future research will suggest a link between the species’s genetic material and possible treatments for humans. Moreover, when efforts have been taken to preserve a remnant population of a species in captivity, there is the possibility that such efforts will fail or that the population in captivity will not capture or retain the full extent of the genetic variation in the species.

<sup>133</sup> Even that may be difficult. A possible adverse effect of pollution on salmon populations is that pollution may raise water temperatures beyond levels in which salmon flourish. Laboratory studies of the effects of pollution on water temperature “may not match up well with the complexities present in natural systems.” *See* Craig N. Johnston, *Salmon and Water Temperature: Taking Endangered Species Seriously in Establishing Water Quality Standards*, 33 ENVTL. L. 151, 153 n.11 (2003). Laboratory studies also cannot readily replicate the effects of any particular increase in water temperature on salmon because those effects, even in the short-term, occur by means of highly complex pathways and interactions in nature. *See id.* at 153–54 (explaining that high water temperatures can result in elevated risk of disease in salmon, increased predation, and barriers to migration).

The opinions in *Gibbs v. Babbitt*<sup>134</sup> highlight the importance of the allocation of the burden of proof for determinations of the constitutionality of federal preservation regulation. *Gibbs* involved the endangered red wolf of the American Southeast. Acting pursuant to a regulation promulgated under the ESA, the United States Fish and Wildlife Service (“FWS”) instituted a program to reintroduce the wolf into areas of North Carolina and Tennessee.<sup>135</sup> In concluding that the red wolves program had sufficient interstate commercial effects to pass muster under the Commerce Clause, Judge Wilkinson suggested, without saying so, that opponents bear the burden of proof and that they therefore must rebut speculative predictions of interstate effects with specific evidence in order to prevail. For Judge Wilkinson, it was enough that “[p]rotection of the red wolves on private land . . . encourages further research that may have inestimable future value, both for scientific knowledge as well as for commercial development of the red wolf” and that protection of the wolf population, now numbering less than one hundred, could someday give rise to a renewed trade in fur pelts.<sup>136</sup> Implicitly adopting the opposite approach regarding the allocation of the burden of proof, Judge Luttig in his dissent concluded that there had been an inadequate showing that protection of the red wolves on private land would substantially affect interstate commerce. Judge Luttig criticized the majority for “unhesitatingly” concluding that the FWS regulation would substantially affect interstate commerce notwithstanding that “we are confronted here with an administrative agency regulation of an activity [harming red wolves] that implicates but a handful of animals . . . . An activity that has no foreseeable economic character at all, except upon the baldest (though admittedly most humorous) of speculation that the red wolf pelt trade will once again emerge as a centerpiece of our Nation’s economy.”<sup>137</sup>

Even when the legal regime allocates the burden of proof vis-à-vis interstate commercial effects to the proponents of regulation, the proponents are very likely to prevail if they are permitted to aggregate all the sites covered or that could ever be covered by the federal statute or program at issue in constructing and supporting their predictions of interstate commercial effects. Under an aggregation approach, the proponents of the preservation of the Austin, Texas, habitat of (for example) the

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<sup>134</sup> 214 F.3d 483 (4th Cir. 2000).

<sup>135</sup> As part of the plan, FWS prohibited private landowners from killing wolves except under very limited circumstances. The landowners claimed that the wolves, if they multiplied as FWS hoped, would pose a substantial risk to livestock populations. *Gibbs*, 214 F.3d at 488–89.

<sup>136</sup> *Id.* at 494–95. Judge Wilkinson’s opinion—and more broadly what I identify above as the Wilkinson/Wald approach—can be understood as explicitly recognizing amorphous-option-value concerns, if not existence value concerns, as a basis for Commerce Clause jurisdiction.

<sup>137</sup> *Id.* at 506, 508–09.

Tooth Cave spider<sup>138</sup> might be able to rely on the predictable interstate commercial effects of the destruction of all endangered species habitats and hence all endangered species in the United States. Similarly, the proponents of the preservation of a single small wetland in suburban Chicago—a wetland used by perhaps a few dozen migratory birds—might be able to rely on the predictable interstate commercial effects of the destruction of all wetlands in the nation used by migratory birds.

The Supreme Court has repeatedly sanctioned aggregation—even what might be termed expansive aggregation—in the context of Commerce Clause challenges,<sup>139</sup> but recent decisions raise questions about the Court’s posture toward aggregation. In *Lopez* and *Morrison*, the Supreme Court indicated its discomfort with the potential for an aggregation approach, coupled with a low threshold as to what constitutes the requisite “substantial” affects on interstate commerce, to confer *de facto* plenary jurisdiction upon Congress.<sup>140</sup> Dicta in Justice Rehnquist’s opinion for the majority in *SWANCC*, moreover, could be read as signaling discomfort with aggregation in the context of federal preservation regulation.<sup>141</sup>

The opinions in *National Home Builders v. Babbitt* highlight the importance of the question of whether (and if so to what extent) aggregation is permitted.<sup>142</sup> The County of San Bernardino hoped to build roads through

<sup>138</sup> See *supra* note 58.

<sup>139</sup> See, e.g., *Wickard v. Filburn*, 317 U.S. 111, 128–29 (1942) (holding that Congress’s power under the Commerce Clause extended to the regulation of the growing of bushels of wheat for domestic consumption by one landowner because, in the aggregate, the growing of wheat for domestic consumption has a substantial effect on overall demand for the purchase of wheat and hence has a substantial effect on interstate commerce). For a discussion of how the meaning of aggregation as a legal approach turns heavily on the level of generality of aggregation that is deemed permissible, see John Copeland Nagle, *The Commerce Clause Meets The Delhi Sands Flower-Loving Fly*, 97 MICH. L. REV. 174, 191–202 (1998).

<sup>140</sup> See *Lopez*, 514 U.S. at 567–68 (rejecting a Commerce Clause doctrine that would allow Congress to regulate “any activity” and insisting that the “truly local” remain outside the sphere of federal regulation); *Morrison*, 529 U.S. at 615 (rejecting “petitioners’ reasoning” that “would allow Congress to regulate any crime as long as the nationwide, aggregated impact of that crime has substantial effects on employment, production, transit, or consumption”).

<sup>141</sup> *SWANCC* involved both a statutory and constitutional challenge to the authority of the United States Army Corps of Engineers to prevent the filling of so-called “isolated wetlands.” In the aggregate, such wetlands, which include thousands of vernal pools and prairie potholes, provide important habitat for migratory bird populations that are the subject of substantial interstate commerce in the form of hunting and birdwatching. The Court held that the Corps regulation providing jurisdiction over isolated wetlands fell outside the authority granted the Corps under the Clean Water Act, but in dicta also strongly suggested that the regulation was problematic as a matter of constitutional law, and that one of the virtues of the statutory holding was that it allowed the Court to avoid striking down the Corps’s regulation of isolated wetlands as unconstitutional. *SWANCC*, 531 U.S. at 174. This dicta makes sense only under a legal standard that rejects aggregation or, alternatively, that allocates the burden of proof—and an extremely high, extremely exacting burden of proof—to the proponents of federal preservation regulation. However, the *SWANCC* opinion also includes language suggesting the Court’s continued adherence to an aggregation approach, so the meaning of the opinion is difficult to discern. *Id.* at 173.

<sup>142</sup> 130 F.3d 1041 (D.C. Cir. 1997).

the habitat of the endangered Delhi Sands flower-loving fly, and sought a declaratory judgment that the application of the ESA to the fly exceeded Congress's authority under the Commerce Clause. In affirming the district court's denial of declaratory judgment, Judge Wald in her opinion for the court relied squarely on aggregation: "because we know that in the aggregate the extinction of endangered species will have a substantial effect on interstate commerce, it does not matter that it is 'impossible to calculate the exact impact' of the extinction of a single species such as the Fly."<sup>143</sup> Judge Sentelle's dissent implicitly rejected aggregation, focusing on the fly and only the fly. The majority's argument, Judge Sentelle maintained, amounted to nothing more than the claim that "because of some undetermined and indeed undeterminable possibility that the fly might produce something at some undefined and undetermined future time which might have some undefined and undeterminable medical value, which in turn might affect interstate commerce at that imagined future point, Congress can today regulate anything which might advance the pace at which endangered species becomes extinct."<sup>144</sup>

Under the Wilkinson/Wald approach, existence-value regulation is safe from constitutional invalidation, even if that safety is achieved without any explicit acceptance of existence-value concerns as a basis for federal regulation. By contrast, under the Luttig/Sentelle approach, the constitutionality of all existence-value regulation that operates to prevent natural resource degradation and destruction outside federal land is in doubt. The Luttig/Sentelle approach could result in the striking down of a number of federal preservation regulations as unconstitutional. It also could result in narrow constructions of preservation statutes justified as a means of avoiding holdings that Congress had exceeded its constitutional authority.<sup>145</sup>

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<sup>143</sup> *Id.* at 1053. See also *GDF Realty Inv. v. Norton*, 326 F.3d 622, 624 (5th Cir. 2003) (upholding habitat protection of endangered invertebrates on the basis of the aggregation of all endangered species). Judge Henderson's concurrence in *National Home Builders* took a different approach in upholding federal regulation of the fly habitat: Judge Henderson reasoned that, because the destruction of the fly habitat would have occurred as part of a commercial activity (commercial construction), regulation prohibiting that destruction qualifies as regulation of commerce and hence falls within the purview of the Commerce Clause. See *National Home Builders*, 130 F.3d at 1059 (Henderson, J., concurring); see also *Rancho Viejo, LLC v. Norton*, 323 F.3d 1062 (D.C. Cir. 2003) (employing the same rationale in upholding restrictions on residential development that would destroy the habitat of the endangered arroyo toad in Northern California). This approach does not provide a rationale for upholding federal regulation aimed at preserving natural resources that are threatened by arguably non-commercial actions and practices, such as, for example, homeowners' use of pesticides on their lawns in areas where pesticide runoff is endangering stream water quality and hence stream wildlife.

<sup>144</sup> *National Home Builders*, 130 F.3d at 1064 (Sentelle, J., dissenting).

<sup>145</sup> See Christopher H. Schroeder, *Environmental Law, Congress, and the Court's New Federalism Doctrine*, 78 *IND. L.J.* 413, 452-57 (2003) (arguing that courts hostile to environmental regulation are likely to follow the *SWANCC* approach of undermining programs by narrowly construing statutes, rather than by striking down statutes as unconstitutional).

*B. Standing*

Almost all of the federal environmental laws include citizen suit provisions, and citizen suits have been at the heart of the development and implementation of federal environmental law, including federal environmental law aimed at natural resource preservation.<sup>146</sup> In order for a citizen or group of citizens to bring a citizen suit, they must have not only statutory standing but also standing in a constitutional and prudential sense. As currently formulated by the Supreme Court, the constitutional/prudential requirements for standing are particularly difficult for plaintiffs to meet in cases involving a kind of regulation that is very likely to be premised on existence-value concerns—regulation concerning highly remote resources that no Americans or extremely few Americans visit. The Supreme Court’s recent standing case law regarding the constitutional requirement for standing, in that sense, can be understood as distinctively hostile to existence-value regulation.

In a famous dissent in *Sierra Club v. Morton*,<sup>147</sup> Justice Douglas argued that

[c]ontemporary public concern for protecting nature’s ecological equilibrium should lead to the conferral of standing upon environmental objects to sue for their own preservation. Those people who have a meaningful relation to [the natural resource] . . . must be able to speak for the values [the resource] represents and which are threatened with destruction.<sup>148</sup>

The Court has never gone as far as Justice Douglas proposed: it has never allowed plaintiffs to sue on behalf of natural resources, or recognized existence value as a kind of injury that may confer standing. But the Court, in the period following *Morton*, did interpret injury-in-fact very broadly to include, for example, aesthetic injury, and accepted as adequate minimal proof of actual injury or potential injury.<sup>149</sup>

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<sup>146</sup> See PERCIVAL ET AL., *supra* note 12, at 996–1032.

<sup>147</sup> 405 U.S. 727 (1972).

<sup>148</sup> *Id.* at 741–43 (Douglas, J., dissenting).

<sup>149</sup> See Daniel A. Farber, *Stretching The Margins: The Geographic Nexus In Environmental Law*, 48 STAN. L. REV. 1247, 1250 (1996) (arguing that the Court’s post-*Morton* and pre-*Lujan I* and *II* approach to standing, while nominally embracing “localism” and nominally rejecting “globalism,” stretched localism to such an extent that was “almost indistinguishable in practice from globalism. Although, under traditional localism, the plaintiff has standing only to protect her local environment, a sufficiently generous view of causation allows conduct in one location to form a link with environmental damage almost anywhere else, thereby virtually globalizing standing.”). See also Ann E. Carlson, *Standing for the Environment*, 45 UCLA L. REV. 931, 935 (1998) (discussing the evolution of the Court’s standing doctrine).

*Lujan v. National Wildlife Federation*<sup>150</sup> (*Lujan I*) and *Lujan v. Defenders of Wildlife*<sup>151</sup> (*Lujan II*) marked a shift in the Court's standing jurisprudence. In two opinions authored by Justice Scalia, the Court adopted a stricter approach to injury-in-fact, requiring that the injuries had occurred or would occur in the precise location of the resource or activity under dispute. According to the *Lujan* opinions, "a plaintiff claiming injury from environmental damage must use the area affected by the challenged activity."<sup>152</sup> This use-of-the-affected-area requirement is sometimes difficult for plaintiffs to meet in cases involving distant, isolated resources, which are precisely the kind of resources plaintiffs presumably would want to protect because of existence-value, rather than physical-spillover or use-value, concerns. Of course, even under *Lujan I* and *II*, plaintiffs motivated by existence-value concerns can establish standing by purchasing plane tickets to visit the remote resource and, if absolutely necessary, they can make the trip. But the requirement of a tight geographic nexus between the plaintiffs and the natural resource at issue certainly adds to the costs environmental plaintiffs must bear, and, at the margin, may decrease the number and scope of citizen suits to compel enforcement of federal preservation laws premised on existence-value concerns.

In a post-*Lujan II* decision, *Friends of the Earth v. Laidlaw Environmental Services*,<sup>153</sup> the Court signaled greater receptivity to environmental citizen suits in holding that a citizen group had standing to challenge a company's pattern of noncompliance with a Clean Water Act permit even though the company came into compliance with its permit requirements once the citizen suit was filed. Some of the members of the citizen group lived near the facility in question, and the Court therefore was not called upon to revisit the relationship between the injury-in-fact requirement and geographic proximity. But *Laidlaw* may indicate that a majority of the Justices would be open to reconsidering the wisdom of what Justice Stevens called the "rigid . . . geographic formalism"<sup>154</sup> of the *Lujan I* and *II* approach.

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<sup>150</sup> 497 U.S. 871 (1990) (holding that plaintiffs lacked standing to challenge the legality of the lifting of restrictions on mining and other uses of 180 million acres of public land because plaintiffs claimed only to have used a very small portion of that land).

<sup>151</sup> 504 U.S. 555 (1992) (holding that the plaintiffs lacked standing to challenge under the ESA the federal government's funding of projects in Egypt and Sri Lanka).

<sup>152</sup> *Lujan II*, 504 U.S. at 565–66.

<sup>153</sup> 528 U.S. 167 (2000).

<sup>154</sup> *Lujan II*, 504 U.S. at 595 (Stevens, J. concurring). Justice Stevens seemed to endorse standing based on pure existence-value concerns, provided there is evidence of the genuineness of those concerns. *See id.* at 584 n.2 (Stevens, J., concurring) (arguing that "[t]he interest that confers standing in a case of this kind is comparable, though by no means equivalent, to the interest in a relationship among family members that can be immediately harmed by the death of an absent member, regardless of when, if ever, a family reunion is planned to occur. Thus, if the facts of this case had shown repeated and regular visits by the respondents [to the sites of the endangered animals in question] . . . proof of an intent to revisit [those sites, and observe the animals, in the future] might well be superfluous").

In sum, the constitutional status of federal existence-value-motivated regulation aimed at the preservation of natural resources is not a closed question. Constitutional challenges against such regulation can be constructed under the Takings Clause and the Commerce Clause, and arguments against vigorous citizen enforcement of such regulation similarly can be constructed under the Court's constitutional jurisprudence of Article III standing. However, established Takings, Commerce Clause, and standing doctrines unquestionably leave room for the courts to reject the constitutional challenges to existence value regulation and to its vigorous enforcement by means of citizen suits. Whether the courts choose to do so will depend in part, although surely only in part, on their acceptance or rejection of the substantive merits of existence-value regulation.<sup>155</sup>

## VII. CONCLUSION

This Article has developed a normative argument regarding the extent to which existence values can justify federal environmental regulation. The argument is not that existence-value concerns, by themselves in the abstract, justify any particular outcome in terms of federal environmental regulation. Rather, my claim is that where existence-value concerns outweigh competing concerns in the federal political marketplace and hence produce environmentally protective regulation, there is good reason to presume that the resulting regulation, on net, enhances aggregate social welfare. This claim in turn depends on an empirical claim: that proponents of environmental regulation face disadvantages in the federal political process as a result of relatively high transaction costs of political organization and the presence of institutional structures that operate to amplify the power of extractive industries.

Existence values, of course, are not solely the domain of federal preservation regulation. The question of existence values as a basis for federal regulation is also implicated in debates over federal regulation outside environmental law, such as the Violence Against Women Act at issue in *Morrison*.<sup>156</sup> Existence values are also central to ongoing debates in international law regarding the permissibility of trade restrictions motivated by human rights and/or environmental concerns. A logical next step in this project, then, is to explore how generalizable (or not) arguments regarding federal preservation regulation are to other contexts.<sup>157</sup>

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<sup>155</sup> In approaching constitutional challenges to preservation regulation, the courts must also be mindful of how their treatment of such regulation could spill over to other sorts of federal regulation. The more the courts perceive themselves as able *de facto* or *de jure* to limit their holdings regarding the constitutionality of preservation regulation to such regulation, the more important will be their assessment of the substantive merits of such regulation.

<sup>156</sup> 529 U.S. 598 (2000).

<sup>157</sup> I address some of these issues in a working paper, *Values without Borders: Extraterritorial Protection of Natural Resources in Constitutional and International Legal Discourse* (on file with author).