ARTICLES

Trampling the Public Trust

Debra L. Donahue

Abstract: Livestock production is a chief contributor to many significant and intractable environmental problems. This Article examines the causal role of livestock (especially beef) production in global climate change, predator control in the western United States, and winter elk feeding in Wyoming. It argues that ending livestock grazing on western public lands is a cost effective first step for dealing with these problems and is readily achievable under existing law. Removing livestock would lead to improved watershed conditions and make reintroduction of predators politically feasible, which would promote further recovery of landscapes impacted by native ungulate populations. Ending public-land grazing would facilitate the closure of (arguably unlawful) elk feedgrounds, which contribute to unnaturally high elk populations and promote the spread of diseases. Closing the feedgrounds would improve conditions on these sites and slow the spread of disease. Collectively, these measures would promote ecosystem restoration, which would enhance prospects for coping with climate change.

The Roberts Court and the Environment

Stephen M. Johnson

Abstract: During the October 2008 Term, the Supreme Court decided five cases that raised issues of environmental law and the environment was the loser in each case. While it may be difficult to characterize the decisions of the Roberts Court, generally, as “pro-environment” or “anti-environment,” a couple themes consistently appear in the Court’s deci-
sions. First, in most of the environmental cases, the Court has adopted a position advocated or defended by a federal, state or local government when governmental interests are at issue. Second, in all of the cases that implicate federalism concerns, the Court has rendered decisions that favor States' rights, regardless of whether the decisions are beneficial to, or harmful to, the environment. Finally, while the Court continues to rely primarily on textualism to interpret statutes, the Court has not relied on textualism to support its decisions in most of the cases that have been harmful to the environment.

NOTES

Anything But a Breeze: Moving Forward Without NFIP Wind Coverage

Michael A. Brown

[pages 365–392]

Abstract: The storm season of 2005, with the indelible images of Hurricane Katrina stuck in our minds forever, left much of the Gulf Coast devastated. The aftermath of the storm also caused serious damage to the National Flood Insurance Program (NFIP or the Program), which provides federally subsidized flood insurance to communities participating in the Program. Following the storms of 2005, many home and building owners and insurance companies began to disagree about the terms of their agreements and the cause of damage upon these structures. The main point of dispute was whether damage could be attributed strictly to flooding, to wind, or to a combination of both. In an effort to eliminate similar disputes and to enhance the ability for home and business owners to obtain relief for their losses, lawmakers have proposed including wind coverage within the NFIP. This Note will examine the NFIP and the idea of adding multiple peril coverage to the Program. This Note will attempt to explain why adding wind coverage to the NFIP will only further exacerbate the problems for an already fiscally irresponsible program.
GREEN BUILDING REGULATIONS: EXTENDING MANDATES TO THE RESIDENTIAL SECTOR

Mariel S. Dator

Abstract: As global warming has garnered significant attention in recent years, sustainability and green campaigns throughout the nation have become more common. Efforts to mitigate the human footprint have led to important developments in sustainable building design and construction. Although much attention is paid to other industry sectors such as transportation, buildings are a major source of greenhouse gases. Green buildings are more efficient and employ a variety of both construction techniques and renewable materials that result in less environmental harm and increased energy efficiency. Municipalities have encouraged large-scale green building projects through mandates or tax incentives. However, the residential sector in most municipalities remains free from these mandates and incentives. This Note argues that the residential sector should be subject to green building mandates.

THE “INTERIOR” REVENUE SERVICE: THE TAX CODE AS A VEHICLE FOR THIRD-PARTY ENFORCEMENT OF CONSERVATION EASEMENTS

Douglas M. Humphrey

Abstract: Conservation easements are increasingly popular. They protect undeveloped land by removing the development right from the landowner’s “bundle of sticks” and giving it to the party holding the easement. These easements confer a public benefit by protecting undeveloped land, dedicating it to use as a park, or preserving its ecosystem services. The Internal Revenue Code (the Tax Code) recognizes the public benefit, offering tax incentives for their donation to qualified organizations. However, the public does not have a vehicle to enforce the easements’ terms. Standing to enforce an easement is generally limited to the parties to the easement and, in some instances, the state attorneys general. This Note proposes a vehicle for collateral enforcement through the Tax Code. It proposes a citizen suit against the Commissioner of Internal Revenue for approving income tax deductions for conservation easements as a way to ensure an easement is beneficial to the public.
Killing Us Softly: How Sub-Therapeutic Dosing of Livestock Causes Drug-Resistant Bacteria in Humans

Ariele Lessing

[pages 463–492]

Abstract: This Note explores antibiotic-resistant bacterial strains in humans and their roots in American industrial livestock practices. Factory farms promote the growth of antibiotic-resistant bacteria—or "superbugs"—by giving animals subtherapeutic doses of antibiotics to prevent the diseases that result from confinement and unhygienic conditions. Although Congress has repeatedly attempted to pass legislation to curtail the use of subtherapeutic antibiotic dosing in livestock, those efforts have yielded little change for nearly a decade. Similarly, the Food and Drug Administration (FDA) has stood by while antibiotic-resistance in human bacteria has exploded into a critical public health issue. This Note advocates for citizen action under the Administrative Procedure Act to prompt the FDA to withdraw animal approval for antibiotics that are important to human health. A citizen petition has a greater chance of success today than in past years due to the newly available scientific data and international recognition of the dangers of the overuse of antibiotics in factory farming.

Great Lakes Compact and an Ohio Constitutional Amendment: Local Protectionism and Regional Cooperation

Nicholas T. Stack

[pages 493–522]

Abstract: The Great Lakes represent a precious natural resource that holds approximately twenty percent of all the fresh water on earth. Its sheer size creates an inherent regional connectedness among eight states and two Canadian provinces. While each of these actors rely heavily on the health of the Great Lakes for its individual economic well-being and quality of life, proper regional management of the Lakes has historically proven difficult. The passage of the Great Lakes Compact marks a significant step towards the successful management of the Great Lakes water resources. The Compact's structure recognizes modern science and creates a unique balance of regional protection and state autonomy. Its ultimate effectiveness will depend on the states' abilities to cooperate on a regional level. A 2008 state constitutional amendment passed in Ohio, however, demonstrates how local protectionist attitudes can erode the spirit of cooperation necessary to implement an effective regional water management regime.
TRAMLING THE PUBLIC TRUST

DEBRA L. DONAHUE*

Abstract: Livestock production is a chief contributor to many significant and intractable environmental problems. This Article examines the causal role of livestock (especially beef) production in global climate change, predator control in the western United States, and winter elk feeding in Wyoming. It argues that ending livestock grazing on western public lands is a cost effective first step for dealing with these problems and is readily achievable under existing law. Removing livestock would lead to improved watershed conditions and make reintroduction of predators politically feasible, which would promote further recovery of landscapes impacted by native ungulate populations. Ending public-land grazing would facilitate the closure of (arguably unlawful) elk feedgrounds, which contribute to unnaturally high elk populations and promote the spread of diseases. Closing the feedgrounds would improve conditions on these sites and slow the spread of disease. Collectively, these measures would promote ecosystem restoration, which would enhance prospects for coping with climate change.

Introduction

The “American public doesn’t seem to care much about what we call rangelands,” says Dr. Steven Herman, adding that “rangelands” is “a horrible term.”1 Horrible because most people associate “rangelands” not with valuable watersheds or “extraordinary biodiversity and beauty,” but with livestock grazing.2 And according to the aphorism, if land isn’t good for anything else, it’s still good for grazing.3

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* © 2010, Debra L. Donahue, University of Wyoming College of Law, Laramie, Wyoming. This Article derives from presentations given in 2009 at the University of Montana Rural Law Symposium and the Rocky Mountain Mineral Law Foundation’s 14th Institute for Natural Resources Law Teachers. I am grateful to Morris Massey, of the Brown, Drew & Massey law firm in Casper, Wyoming, and the Goodstein Law Faculty Research Fund for their generous support. Dr. Robert Beschta offered perceptive comments on the manuscript; I salute him and his colleagues for their important work on trophic cascades. Finally, I thank my husband (and resident editor) for helping me make my case in fewer words.

1 This statement is quoted in MIKE HUDAK, WESTERN TURF WARS: THE POLITICS OF PUBLIC LANDS RANCHING 269 (2007). Dr. Herman teaches ecology, natural history, and animal behavior at Evergreen State College in Washington.

2 See id. Despite the paean to a “home on the range,” these lands have been treated generally with contempt. See generally infra notes 6–11 and accompanying text. The Society for Range Management defines rangelands as lands “characterized by native plant communities, which are often associated with grazing,” adding that “range’ can also include
Seldom do you hear that grazing is not necessarily good for the land. Livestock production is the most widespread land use in the United States and the world. Perhaps its ubiquity has inured us to the damage it causes. Livestock production is a “major stressor on many ecosystems and on the planet as a whole”—“one of the top two or three most significant contributors to the most serious environmental problems, at every scale from local to global.” While the harmful consequences of this sector are (at long last) drawing increasing attention from the popular press:

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3 The corollary is that nearly any land can be used to produce livestock. See Debra L. Donahue, Federal Rangeland Policy: Perverting Law and Jeopardizing Ecosystem Services, 22 J. LAND USE & ENVTL. L. 299, 306 n.53 (2007) (suggesting, based on Bureau of Land Management (BLM) statistics, that “the only BLM lands that are not available for livestock grazing—19 of 262 million acres—‘consist of barren mountains, mountaintops, glaciers, sand dunes, and playas’”); cf. U.N. FOOD & AGRIC. ORG. [FAO], LIVESTOCK’S LONG SHADOW 280 (2006) [hereinafter FAO] (“In the past, livestock occupied vast territories because there was no possible alternative use, i.e. the land had no opportunity costs; this made marginally productive activities, such as extensive grazing, profitable.”).


5 See Fleischner, supra note 4, at 629 (“The destruction caused by livestock grazing is so pervasive and has existed for so long that it frequently goes unnoticed.”).

6 See FAO, supra note 3, at xx, 267. Beef production poses the “largest costs in terms of land and water requirements . . . as well as in terms of contribution to climate change.” Id. at 261.

Producing meat for human consumption has far-reaching implications. Some are obvious and well known, for instance, pollution from unregulated cattle feedlots and the current H1N1, or swine flu, pandemic. But there are other, more insidious effects: streams dewatered to irrigate forage crops, native wildlife displaced, human diet-related and food-borne diseases, consumption of fossil fuels, efficient spread of invasive species, and effects on social and economic status, to name a few. It would be difficult to identify an environmental problem that isn’t somehow connected to or aggravated by livestock production.11

This Article seeks to substantiate this assertion by highlighting three seemingly unrelated issues—one global, the others local or regional—and exploring their common connection to livestock production. The issues are climate change, predator control, and winter elk feeding (the latter two, current controversies in the West). The use of land to produce livestock is a driving force behind each, and the environmental effects of each are intertwined with those caused by livestock


9 See FAO, supra note 3, at 221–22. Recent action in the U.S. Congress, leading up to House passage of the Waxman-Markey climate change bill, is illustrative. See Steven Pearlstein, For the Farm Lobby, Too Much Is Never Enough, WASH. POST, June 26, 2009, at A18, available at http://www.washingtonpost.com/wp-dyn/content/article/2009/06/25/AR2009062504133.html (reporting that, despite numerous concessions to agriculture, the Farm Bureau Federation—“the world’s most selfish lobby”—“urged all House members to vote against” the bill).

10 See generally Debra L. Donahue, Elephant in the Room: Livestock’s Role in Climate and Environmental Change, 17 MICH. ST. J. INT’L L. 95 (2008) (discussing how policy makers ignore the grave environmental impacts of livestock production and grazing). Various scientific disciplines, including hydrology and forest ecology, also ignore or dismiss the elephant in the room. See, e.g., JACK E. WILLIAMS ET AL., WATERSHED RESTORATION: PRINCIPLES AND PRACTICES (1997) (containing only a few paragraphs about grazing even though it is a 500-page volume).

11 This is my variation on John Muir’s observation: “When we try to pick out anything by itself, we find it hitched to everything else in the universe.” JOHN MUIR, MY FIRST SUMMER IN THE SIERRA 211 (1911).
production. This Article’s premise is that tackling this common cause would advance a common solution.\textsuperscript{12}

It might strike readers as overreaching to attempt to treat in a single article climate change, which has been referred to as the most pressing challenge of our generation, along with local (some would say parochial) topics like predator control and elk feeding. Even granting a legitimate link among the three issues, a single article could barely scratch the surface of any one of them, each of which pits private against public interests, state against state, governments against citizen groups, and historical practices against new scientific understandings.

This Article’s aims are relatively modest: to call further attention to the environmental scourge that is livestock (especially beef) production by identifying its connection to these three seemingly disparate issues, and thereby advance the case for reforming livestock production practices. In particular, this Article proposes the specific reform of removing livestock from public lands. Experts warn that comprehensive climate change policies\textsuperscript{13} must address the livestock sector.\textsuperscript{13} Predator control and supplemental elk feeding issues will never be resolved without changes in livestock production practices. Ending public-land

\textsuperscript{12}The authors of a leading casebook had this to say about voluntary retirement of federal grazing permits:

[Grazing buyouts appear] to offer great benefits, environmental and otherwise. They lead to restoration of the health of riparian areas and wildlife populations. They give the government land managers more flexibility to cope with drought, fire, and insect outbreaks. They may achieve tangible, visible environmental improvements in a short time in a less contentious way than pitched battles over regulation. Economists have advocated grazing buyouts since the 1950s.

\textsuperscript{13}See, e.g., FAO, supra note 3, at 275–76; U.N. Found. & Sigma Xi, Confronting Climate Change: Avoiding the Unmanageable and Managing the Unavoidable 69–70 (2007) [hereinafter Confronting Climate Change] (“The key to making the needed large reductions in CO\textsubscript{2} emissions is a multi-pronged strategy that addresses all of the major emission sources. . . . [This includes] possibilities for reducing the carbon emissions from land-use change by means of . . . improved soil-management practices in agriculture.”); see also infra notes 163–71, 177–78 and accompanying text; cf. Keith Paustian et al., Agriculture’s Role in Greenhouse Gas Mitigation, at v (2006) (“Agriculture has much to offer in helping to reduce net [greenhouse gas (GHG)] emissions to the atmosphere.”); id. at 58 (“Agricultural activities have a broad and multi-faceted impact on all three of the main GHGs—carbon dioxide, methane, and nitrous oxide—and policies designed to mitigate GHGs must consider impacts on all three GHGs.”).
grazing offers a more readily achievable and cost effective first step for dealing with each of these issues than any other measure yet suggested.

I. Focus: Riparian Areas

Riparian areas—“transitional areas between terrestrial and aquatic ecosystems,” which are adjacent to streams and other bodies of water—are the focus of vital landscape processes, especially in the arid West. In several ways, they also provide a focus for this Article’s wide-ranging discussion.

Of the ecological harms wrought by livestock, the damage to streams and riparian areas is probably best known. These impacts have been recognized—and studied—for decades. In 1924 Aldo Leopold concluded that grazing was “the prime factor in destroying watershed values” in Arizona, and he wrote that, in the Southwest generally, “any grazing at all, no matter how moderate, is liable to overgraze and ruin the watercourses.” Seventy years later, the Federal Bureau of Land Management (BLM) predicted that “[w]atershed and water quality conditions would improve to their maximum potential” if livestock were removed from public lands.

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15 See, e.g., A. Joy Belsky et al., Survey of Livestock Influences on Stream and Riparian Ecosystems in the Western United States, 54 J. SOIL & WATER CONSERVATION, 419, 419 (1999); Fleischner, supra note 4, at 634.

16 See A. Joy Belsky & Dana M. Blumenthal, Effects of Livestock Grazing on Stand Dynamics and Soils in Upland Forests of the Interior West, 11 CONSERVATION BIOLOGY 315, 321 (1997) (“The most thoroughly studied irregularity in livestock distribution is the heavy use by cattle of riparian areas.”).

17 Aldo Leopold, Some Fundamentals of Conservation in the Southwest, 1 ENVTL. ETHICS 131, 137 (1979), reprinted in The River of the Mother of God and Other Essays By Aldo Leopold 86, 92 (Susan L. Flader & J. Baird Callicott eds., 1991); see Debra L. Donahue, The Western Range Revisited: Removing Livestock from Public Lands to Conserve Native Biodiversity 116 (1999); see also K.L. Cole et al., Holocene Vegetation and Historic Grazing Impacts at Capitol Reef National Park Reconstructed Using Packrat Middens, 57 GREAT BASIN NATURALIST 315, 315, 324 (1997) (concluding that the “most severe vegetation changes of the last 5400 years” on the Colorado Plateau resulted from livestock grazing during the last two centuries); Fleischer, supra note 4, at 634; Allison Jones, Review and Analysis of Cattle Grazing Effects in the Arid West, with Implications for BLM Grazing Management in Southern Utah (Feb. 2001), http://rangenet.org/directory/jonesa/litrevel.html (a literature review submitted to the Southern Utah Landscape Restoration Project).

A National Research Council (NRC) committee\(^{19}\) provided support for the BLM’s assessment when, in 2002, it reported that “[e]xcluding cattle from riparian areas is the most effective tool for restoring and maintaining water quality and hydrologic function, vegetative cover and composition, and native species habitats,” and that in “riparian areas degraded by livestock,” conditions “will not improve without changes in grazing management.”\(^{20}\) The committee also warned: “Even where grazing in riparian areas is excluded or properly managed, grazing also must be managed on uplands to protect riparian areas.”\(^{21}\) By all accounts, this advice has not been followed on public lands. In 1994 the BLM itself reported that riparian areas throughout the American West were in their worst condition in history and that conditions on dry uplands had not improved under BLM management.\(^{22}\)

To understand the magnitude of the problem and the NRC committee’s advice, one must consider: First, grazing is the most widespread and longest running land use in the West. It occurs on about 260 million acres of public lands, an area 2½ to 3 times the size of California. Authorized use is more than 12 million AUMs—the equivalent of 4 million cows with calves living off the public lands for three months each year.\(^{23}\) Second, even though riparian areas are “the most productive habitats in North America,”\(^{24}\) they comprise less than one percent of the land area of the West. More wildlife species depend on riparian areas than any other habitat.\(^{25}\) They are hugely important for providing many other

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\(^{19}\) National Research Council Committee on Riparian Zone Functioning and Strategies for Management. The author was a member of the committee.

\(^{20}\) See NRC Report, supra note 14, at 393.

\(^{21}\) Id. (emphasis added).

\(^{22}\) Rangeland Reform, supra note 18, at 45.

\(^{23}\) See, e.g., Coggins et al., supra note 12, at 767–68. “AUM” refers to “animal unit month.” Actual (or active) use is less, which is, in itself, suggestive of range condition. The agencies like to point out that the animal numbers are down since the 1950s. But the numbers and the impacts don’t enjoy a straight-line relationship, in part because cattle weights, and thus their destructive capacity, have increased, see, for example, Revisiting Long-Term Trends in Livestock Weights, Letter #33 (Livestock Marketing Info. Ctr.), Aug. 13, 2004, at 1–3, available at http://www.ag.ndsu.nodak.edu/aginfo/lsmkt/docs/ac081304.pdf, and in part because continued grazing can push (and has pushed) range conditions past ecological thresholds, with potentially irreversible results, see, for example, Donahue, supra note 17, at 146–51, 179, 316 n.96 (discussing the threshold concept and citing sources).

\(^{24}\) See Fleischner, supra note 4, at 635.

ecosystem services as well.\textsuperscript{26} It is the water they harbor, and the associated willow, cottonwood, and other tree/shrub communities, which make riparian areas so valuable—and which lead cattle to congregate there.\textsuperscript{27} Cattle impacts include soil erosion and streambank damage, loss of palatable plants, the spread of weedy plants, and changes in the age structure of riparian forests.\textsuperscript{28} Grazing can “eliminate a willow stand within thirty years.”\textsuperscript{29} Over longer periods it drastically reduces and can eliminate cottonwood recruitment.\textsuperscript{30} The impacts on water quality and channel stability can be severe.\textsuperscript{31}

Dismal riparian conditions reflect a failure of stewardship, not a lack of knowledge concerning either the value of these areas or the destructiveness of grazing. If further incentive to tend riparian areas carefully or more information about the consequences of poor management were needed, however, the last decade has provided both. For example, we understand that riparian areas become ever more valuable as the climate changes.\textsuperscript{32} We also know that how we choose to adapt to

\begin{footnotes}
\item[26] See generally NRC Report, supra note 14; Donahue, supra note 3.
\item[27] See Belsky & Blumenthal, supra note 16, at 321 (“The most thoroughly studied irregularity in livestock distribution is the heavy use by cattle of riparian areas.”).
\item[28] Fleischner, supra note 4, at 637.
\item[30] Robert L. Beschta & William J. Ripple, Rapid Assessment of Riparian Cottonwood Recruitment: Middle Fork John Day River, Northeastern Oregon, 23 Ecological Restoration 150, 154 (2005) (determining that long-term grazing/browsing of cottonwood by cattle—the “principal land use along [these] riparian systems . . . since at least the late 1800s”—has caused a decline in or total lack of cottonwood recruitment); accord Fleischner, supra note 4, at 633–34; see also Robert L. Beschta & William J. Ripple, Wolves, Trophic Cascades, and Rivers in the Olympic National Park, USA, 1 ECOHYDROLOGY 118, 120–21 (2008) [hereinafter Beschta & Ripple, Wolves, Trophic Cascades, and Rivers] (citing sources regarding long-term deleterious effects of elk over-browsing on woody species growth and recruitment).
climate change will determine the severity of many climate change impacts, especially on ecosystem services.\textsuperscript{33} One adaptation strategy that holds great promise is to restore ecosystems.\textsuperscript{34}

Which brings us back to livestock grazing.

\section*{II. Trophic Cascades and Predator Control}

New research provides striking, if indirect, evidence that removing livestock could restore rangeland ecosystems. Studies in national parks in six different North American ecosystems—Yellowstone, Yosemite, Wind Cave, Zion, and Olympic National Parks in the United States, and Jasper National Park in Canada—have shown that ecosystems unravel when “keystone” predators are removed.\textsuperscript{35}

\begin{quote}
\textsuperscript{33} See U.S. Climate Change Sci. Program, Climate Change and Ecosystems Summary of Recent Findings 1–4 (2008), available at http://www.climatescience.gov/Library/sap/sap4-4/final-report/sap4-4-brochure-FAQ.pdf (reporting that stream temperatures are likely to increase as the climate warms, which is very likely to have effects on aquatic ecosystems and water quality; climate change in arid lands will very likely create physical conditions conducive to wildfire, and the proliferation of exotic grasses will very likely provide fuel, thus causing fire frequencies to increase in a self-reinforcing fashion; and river ecosystems in arid lands will very likely be negatively impacted by decreased streamflow, increased water removal, and greater competition from non-native species).

\textsuperscript{34} See infra note 174 and accompanying text.

In each study area the absence of top predators—primarily wolves and/or cougars—resulted in a similar “cascade” of effects.36

- Populations of native ungulates, chiefly elk (where wolves were the apex predator) or deer (where cougars were the apex predator), increased significantly and foraging behavior changed.37
- The ungulates spent more time in riparian areas, and they over-browsed preferred plants, especially cottonwood, aspen, willow, oaks, maples, and berry-producing shrubs.
- “Recruitment” of cottonwood and aspen—the growth of seedling/sprouts into tall saplings and trees—was drastically reduced, and uncommon plants became rare or disappeared.
- Loss of streamside vegetation caused major changes in channel stability and floodplain function.
- Loss of young aspens and cottonwoods and berry-producing shrubs led to decreases in the diversity and abundance—and sometimes outright loss—of other species, including beaver, amphibians, and songbirds.38
- Furthermore, the loss of top predators triggered an explosion of “mesopredators,” such as coyotes, which led to further cascading effects.39

In all six national parks, the researchers were able to exclude other environmental factors, including long-term variations in winter weather or snowpack and fire, as significant causes of the changes they observed.40

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37 An ungulate is a hoofed mammal.

38 Other researchers also have reported that “[l]oss of beaver produces cascading effects on other biota.” Bruce L. Smith et al., Imperfect Pasture: A Century of Change at the National Elk Refuge in Jackson Hole, Wyoming 130 (2004).


40 See Beschta & Ripple, Large Predators, supra note 35, at 2407–09. Some of these studies involved before- and after-predator-removal comparisons; others (like Zion) relied on
What is exciting about this research is that the damage seems to be reversible. In the Yellowstone area, for instance, the return of wolves has led to renewed recruitment of cottonwood, aspen, and willow, and it holds “great promise for the eventual recovery of riparian plant communities.” Moreover, based on the initial recovery of vegetation and beavers along the upper Gallatin River in the northwestern corner of the park, Robert Beschta, a forest hydrologist and one of the principal researchers, believes that the river channel itself is on the road to restoration.

The Yellowstone experience also undermines the notion that simply reducing ungulate populations—for example, by hunting—can achieve the same results. The Park Service reduced elk numbers ag-

comparisons between areas with and without predators. The Greater Yellowstone study areas allowed comparison of historical, no-wolf conditions with conditions following reintroduction of wolves in 1995. In most cases the researchers also used historical photos and accounts as well as aerial photos. Similarly, Smith et al. concluded that “factors other than climate change are responsible for the decline in woody vegetation on the National Elk Refuge.” Smith et al., supra note 38, at 98, 100 (“[C]hanges in snow pack are an unlikely cause of the decline in wet meadow willow communities [on the National Elk Refuge].”).

41 See, e.g., Joshua Halofsky & William Ripple, Linkages Between Wolf Presence and Aspen Recruitment in the Gallatin Elk Winter Range of Southwestern Montana, USA, 81 FORESTRY 195, 204 (2008); Beschta & Ripple, Recovering, supra note 35, at 1. Indeed, “the presence of wolves may be integral to the long-term recruitment” of aspen. Beschta & Ripple, Recovering, supra note 35, at 1.

42 Robert L. Beschta, Reduced Cottonwood Recruitment Following Extirpation of Wolves in Yellowstone’s Northern Range, 86 ECOLOGY 391, 402 (2005).

43 See Beschta & Ripple, Recovering, supra note 35, at 8 (reporting on the “recent return of beaver colonies to the northern range,” and citing D.W. Smith et al., Yellowstone After Wolves, 53 BIOSCIENCE 330, 336–37 (2003)).

44 Telephone interview with Robert L. Beschta, Emeritus Professor, Watershed Processes & Hydrology, Or. State Univ., in Corvallis, Or. (Oct. 5, 2009). Beschta also notes “improvements in plant communities along various tributaries of the Lamar River [in the northeastern corner of the park] and a portion of the Lamar River above the confluence with Soda Butte Creek. But, below Soda Butte Creek, the Lamar River continues to be ‘hammered,’ now by an increasing bison herd in the last five years.” Email from Robert L. Beschta to author (Oct. 7, 2009, 14:24 PDT) (on file with author) [hereinafter Beschta email]. He concludes that the recovery that might otherwise have occurred in the Lamar “has been obscured by bison impacts which now are a major factor along [the Lamar] floodplains, as well as those of other major rivers in the park.” Id.; see also Beschta & Ripple, Recovering, supra note 35, at 7. Beschta commented, wryly, that he had spent a day in the field recently with Park Service officials, and “incredibly, they see no problems along the Lamar River. Like elk of yesteryear (that are now being taken care of by wolves), they simply love their bison.” Beschta email, supra; see also Virginia Morell, Aspens Return to Yellowstone, with Help from Some Wolves, 317 SCIENCE 348, 349 (2007).

45 Year-round hunting, however, might come closer to simulating predation. Beschta and Ripple cited Alverson et al.’s finding that “year-round hunting sufficiently influenced ungulate browsing such that recruitment of palatable tree species continued to occur, whereas tree recruitment on adjacent National Forest lands, with more limited hunting,
gressively until 1968, but the degradation of riparian communities on the park’s northern ranges continued.\textsuperscript{46} After elk culling stopped, the impacts became more severe as the northern range elk herd grew from about 4000 animals to nearly 19,000 within two decades.\textsuperscript{47} Since the introduction of wolves in the mid-1990s, however, conditions have been improving. Trophic cascades theory offers a cogent explanation: Wolf predation reduces elk numbers, yes, but the presence of wolves also affects \textit{where} elk feed and \textit{how long} they spend there. In other words, wolves have brought about changes in elk densities and foraging behavior—a so-called “ecology of fear.”\textsuperscript{48}

We do not yet understand exactly how these top-down processes work.\textsuperscript{49} But it is undeniable that the absence of keystone predators affects ungulate behavior and population dynamics, which in turn disrupts ecosystem processes, with consequences for the ecosystem as a whole.\textsuperscript{50} As Leopold observed: “Yellowstone has lost its wolves and cou-

\begin{itemize}
\item \textsuperscript{46} See Beschta, supra note 42, at 394; Beschta & Ripple, \textit{Recovering}, supra note 35, at 2. In addition, the NPS captured elk and shipped them to many locations in the United States and Canada, and elk that crossed the park boundary into Montana were subject to hunting. \textit{See Beschta email, supra note 44.}
\item \textsuperscript{47} See Beschta & Ripple, \textit{Recovering}, supra note 35, at 2.
\item \textsuperscript{49} For example, other researchers have recently suggested that something else may be going on, too. Matthew J. Kauffman and his colleagues think it is unlikely to be optimal for elk to simply avoid these resources [areas with preferred woody browse], because many of them provide forage during the critical winter months . . . . This need for winter forage most likely explains why elk have not made broad-scale changes in winter habitat selection as a means of avoiding encounters with wolves . . . . How elk perceive and manage the trade-off between food and safety will ultimately determine the existence and strength of a behaviourally mediated trophic cascade in [the Yellowstone northern range].
\end{itemize}


\begin{itemize}
\item \textsuperscript{50} See Norman L. Christensen et al., \textit{The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management}, 6 Ecological Applications 665, 672 (1996). Trophic cascades theory is consistent with Aldo Leopold’s understanding of “land
gars, with the result that elk are ruining the flora, particularly on the winter range.”

The recent research on trophic cascades, and the Yellowstone experience in particular, provides compelling evidence that reestablishing predators could help restore riparian and stream communities and ultimately entire landscapes.

Aldo Leopold was among the first to understand that annihilating large predators led to “irruptions” in populations of native ungulates, with serious consequences for their habitat. Having witnessed firsthand the extermination of wolves and resultant onslaught of deer in the Southwest in the 1920s and 1930s, he wrote:

I have lived to see state after state extirpate its wolves. I have watched the face of many a newly wolfless mountain, and seen the south-facing slopes wrinkle with a maze of new deer trails. I have seen every edible bush and seedling browsed, first to anemic desuetude, and then to death.

Elk and cattle are hardly ecological equivalents, but it’s no stretch to infer that similar mechanisms are behind the damage that this and other non-native ungulates have caused across the West. Imagine the impacts of turning out millions of non-native cattle and sheep, whose numbers were and are largely unaffected by natural controls, such as predators, disease, and competition for food and water. Leopold put the matter this


52 See, e.g., Halofsky & Ripple, supra note 41, at 203 (“[T]wo browse species in different winter ranges [Yellowstone’s northern range and the Gallatin range] and growing under different conditions (riparian cottonwood vs. upland aspen) concurrently declined during the time of wolf extirpation.” (emphasis added)).

53 See LEOPOLD, supra note 51, at 130–33. A 1930 report by the U.S. Forest Service Inspector of Grazing attributed the “problem” to overgrazing by livestock, but noted that the problem was “complicated by the increasingly important deer management problem.” Large predators had been virtually eliminated from much of this area by the 1920s. Memorandum from R.R. Hill, U.S. Forest Service Grazing Inspector, Browse Problem in the Southern Forests of Region 3, at 1 (May 29, 1930), available at http://www.foresthistory.org/ASPNET/Policy/Grazing/Grazing_Inspection.pdf.

54 See Ripple & Beschta, Linking Wolves and Plants, supra note 50, at 619 (quoting LEOPOLD, supra note 51, at 130).

55 See Christensen et al., supra note 50, at 675 (“Human-generated changes must be constrained because nature has functional, historical, and evolutionary limits.”) (quoting S.T.A. Pickett et al., The New Paradigm in Ecology, in CONSERVATION BIOLOGY: THE THEORY
way: “The cowman who cleans his range of wolves does not realize that he is taking over the wolf’s job of trimming the herds to fit the range. He has not learned to think like a mountain. Hence we have dustbowls, and rivers washing the future into the sea.”

Environmental historian Donald Worster compared the consequences of introducing livestock in the West to the “explosive, shattering effect of all-out war.”

Conversely, just as the release from elk-browsing pressure seems to be fostering recovery of Yellowstone’s northern range, removing livestock is known to improve riparian conditions and ecosystem function. Thus, two strategies for restoring ecosystems are to remove livestock and to reintroduce predators.

But just as livestock production contributes to the problem, it also frustrates solutions. Not only have public-land ranchers and their allies strenuously opposed reductions in grazing use and other policy re-

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AND PRACTICE OF NATURE CONSERVATION, PRESERVATION, AND MANAGEMENT 65 (P.L. Fiedler & S.K. Jain eds., 1992)). One commentator recently described the annihilation of bison in the 19th century and their replacement by cattle on the Great Plains thus:

Between 1870 and 1880, at least 10 million buffalo, and possibly as many as 20 million, were killed . . . .

Thereafter the northern plains would be cattle country. Between 1866 and 1884, at least 5 million longhorns were driven north out of Texas. The number of cattle in Wyoming rose from 90,000 in 1874 to 500,000 by 1880; and by 1883 in Montana, where ten years earlier there were practically no cows, half a million now grazed on grasses untouched by their rivals. “For every single buffalo that roamed the Plains in 1871,” wrote [Army] Colonel [Richard] Dodge, “there are in 1881 not less than two, and more probably four or five, of the descendants of the longhorned cattle of Texas.”

Christopher Ketcham, They Shoot Buffalo, Don’t They?, HARPER’S, June 2008, at 66, 68–69.

56 Leopold, supra note 51, at 130–33.


58 See supra note 20 and accompanying text. Removing livestock or fencing them out of riparian areas is widely recommended by government agencies as a “best management practice” for protecting water quality and reducing erosion. A recent five-year study of nearly a dozen streams by the Wyoming Game and Fish Department (WGFD) concluded that “[r]educed or no livestock grazing of riparian buffer strips had a positive affect [sic] on water quality, stream channel morphology, hydrology, riparian zone soils, instream and streambank vegetation and aquatic and riparian wildlife.” BERT JELLISON ET AL., WYO. GAME & FISH DEP’T, RESPONSE OF PRAIRIE STREAM RIPARIAN BUFFERS TO LIVESTOCK EXCLUSION AND SHORT-DURATION GRAZING IN NORTHEAST WYOMING—A PRE- AND POST-PHOTOGRAPHIC COMPARISON 2 (2007), available at http://gf.state.wy.us/habitat/Riparian/RiparianBuffer_Rept_Final.pdf.

59 Both strategies will be required. As the research in the national parks demonstrates, native ungulates (in the absence of predators and livestock) can cause severe impacts on riparian and upland vegetation, soils, etc. See generally Beschta & Ripple, LARGE PREDATORS, supra note 35.
forms, but the livestock industry is the major impediment to reestablishing top predators. Donald Worster described cattle- and sheepmen’s hatred of wolves and coyotes as “almost metaphysical.” Since the founding of this nation, wolves, coyotes, cougars, and bears have been shot, poisoned, and trapped. Wolves and coyotes have been run down and mutilated. Wolves have been intentionally infected with mange. Coyote pups are still pulled from their dens and killed. For more than a century, these activities have been undertaken by government at the behest of ranchers and farmers. In the twenty-first century, “efforts to wage war on wildlife predators are increasing.”

Federal assistance directed at predator control began in 1907. Responding to pressure by the western range livestock industry, the Bureau of Biological Survey and the Department of Agriculture “conducted field studies of wolf and coyote populations and published bulletins on methods of their control.” Part of the impetus was the fact that the new Forest Service had begun charging grazing fees. “[I]t was felt that there was an obligation to offer some protection for live-


61 While large predators were the focus of this campaign, control operations have also caused considerable “collateral damage” to many non-target animals, including threatened or endangered species. See Predator Control—1971. Report to the President’s Council on Environmental Quality and the Department of the Interior by the Advisory Committee on Predator Control 1 (1972) [hereinafter Predator Control]; see also Animal & Plant Health Inspection Serv., U.S. Dep’t of Agric., Wildlife Damage Management; Program Data Reports, http://www.aphis.usda.gov/wildlife_damage/prog_data/prog_data_report_FY1996.shtml (last visited Apr. 15, 2010) (presenting tabular statistics for fiscal years 1996–2006 and graphical information for 2007 with links to state data); Wendy Keefover-Ring, WildEarth Guardians, War on Wildlife: The U.S. Department of Agriculture’s “Wildlife Services” (2009) [hereinafter War on Wildlife] (describing more recent operations of the Federal Wildlife Services as “a ‘sledgehammer approach’ to wildlife management because of the breadth of extermination’); infra notes 77–78 and accompanying text.


65 Predator Control, supra note 61, at 1.
stock.”\textsuperscript{66} The first appropriation for direct predator-control efforts—
$125,000 to the Bureau of Biological Survey—came in 1915.\textsuperscript{67} Soon
“the government found itself saddled with an obligation that continues
to this day.”\textsuperscript{68}

While federal predator control efforts eventually supplanted or ab-
sorbed state programs,\textsuperscript{69} predator control involved cooperation among
local, state, and federal government and livestock producers. Livestock
associations and some individual ranchers helped fund predator control
activities. A federal advisory committee, which studied the predator con-
trol program in 1971,\textsuperscript{70} opined that the confluence of various factors—including
longstanding federal involvement, government “trappers” who made a career of killing predators, and commingled funds—had
established “a continuity of purpose in promoting the private interest of
livestock growers, especially in the western rangeland states” and pro-
duced a “high degree of built-in resistance to change” in predator poli-
cies.\textsuperscript{71} But the committee noted that, while “the program is popular with
ranchers, many of whom urge even more intensive efforts, it has be-
come increasingly objectionable to the public at large.”\textsuperscript{72} The “federal-
state predator control program must be effectively changed,” the panel
concluded. “It must take full account of the whole spectrum of public
interests and values, not only in predators but in all wildlife.”\textsuperscript{73}

In 1971, this predator control program cost $8 million.\textsuperscript{74} By 2001,
federal expenditures of taxpayer dollars for all animal damage control
activities, including predator control, were $23.3 million.\textsuperscript{75} The killing
is carried out by the U.S. Department of Agriculture’s ironically named
“Wildlife Services.”\textsuperscript{76} In 2006 the tally included more than 117,000 na-
tive carnivores, including coyotes, bobcats, foxes, bears, and wolves. In 2008 the numbers of animals (chiefly coyotes and wolves) killed from low-flying aircraft increased by forty percent from the prior year. All this despite the small numbers of livestock lost to predators and a lack of correlation between numbers of predators killed and stock lost.


In 2006, Wildlife Services killed 1.6 million animals, including 117,113 mammalian carnivores, of which 34,056 were shot from aircraft in western states. The regional aerial gurning toll included 25,349 coyotes, 449 bobcats, 56 wolves, and 81 red foxes. See AGRO: A National Coalition to End Aerial Gunning of Wildlife, http://www.goagro.org/index (locate the kill statistics by clicking “Wildlife Killed”) (last visited Apr. 15, 2010). Wildlife Services’ kill statistics for 1996–2007 are available at http://www.aphis.usda.gov/wildlife_damage/prog_data/prog_data_report_FY1996.shtml. See supra note 61. According to one study by federal researchers, the cost of killing a coyote is between $185 and $805 per individual. See Kimberly Wagner & Michael Conover, Effect of Preventive Coyote Hunting on Sheep Losses to Coyote Predation, 63 J. Wildlife Mgmt. 606, 609 (1999) (estimating for portions of Utah and Idaho that “aerial hunting removed 2.3 coyotes/hr at a cost of $185/coyote, while corrective control removed 0.03 coyotes/hr . . . at a cost of $805/coyote”); see also Brian Mitchell et al., Coyote Depredation Management: Current Methods and Research Needs, 32 Wildlife Soc’y Bull. 1209, 1213-14 (2004). In 2008, Wildlife Services “exterminated nearly five million wild animals and pets . . . —a record number and a 125% increase from the 2.2 million animals killed in 2007.” Press Release, WildEarth Guardians, Wildlife Services Exterminates 125% More Animals in 2008 (June 17, 2009), available at http://wildearthguardians.org/library/paper.asp?nLibraryID=765 [hereinafter WildEarth Guardians Press Release]. Wildlife Services claims that the dramatic increase in kill numbers from 2007 to 2008 is due in part to its use of “modeling to better calculate bird mortalities from the avian pesticide, DRC-1339,” which is “mainly used in feedlots and experimentally near sunflower plantations in North Dakota and South Dakota.” Id. See generally WAR ON WILDLIFE, supra note 61 (explaining the role of Wildlife Services in predator control programs).

“Of the 104.5 million cattle that were produced [in the U.S.] in 2005, 190,000 (or 0.18%) died as the result of predation from coyotes, domestic dogs, and other carnivores. In comparison, livestock producers lost 3.9 million head of cattle (3.69%) to all sorts of maladies, weather, or theft.” AGRO: A National Coalition to End Aerial Gunning of Wildlife, http://www.goagro.org/wildlife_and_agriculture.htm (last visited Apr. 15, 2010). The numbers of predators killed to protect livestock is highly disproportionate—one study showed that 1.5 to 9.7 million animals were killed for the benefit of agricultural interests “without cause,” or indiscriminately, by federal agents during the period 1996 to 2001. See Adrian Treves & K. Ullas Karanth, Human-Carnivore Conflict and Perspectives on Carnivore Management Worldwide, 17 Conservation Biology 1491, 1494 (2003). Studies show no correlation between the number of coyotes killed and the number of lambs lost. See, e.g., Frederick F. Knowlton et al., Coyote Depredation Control: An Interface Between Biology and Management, 52 J. Range Mgmt. 398, 407 (1999); Mitchell et al., supra note 77, at 1213; see also
Western “range” states remain unabashedly solicitous of livestock interests, and Wyoming arguably heads up that list. Wyoming’s wolf management plan, for instance—which refers to wolves’ “notorious reputation as livestock killers”\textsuperscript{80}—is plainly a sop to the livestock industry and a handful of hunters and outfitters. The plan (to date, rejected by the U.S. Fish and Wildlife Service) classifies wolves as “predatory animals” in about ninety percent of the state. This subjects them to being shot on sight and to regulation (or not) by the state Department of Agriculture.\textsuperscript{81} One high-ranking Wyoming Game and Fish Department (WGFD or the Department) official stated publicly that the Department plans to “maintain a higher number of wolves than the minimum required,” \textit{but only to} “allow us some flexibility in dealing with wolves that are impacting livestock or wildlife and need to be removed.”\textsuperscript{82}

\textsuperscript{80} Wyoming Wolf Management Plan, \textit{supra} note 79, at 8. The plan concedes: “Wolf depredation on livestock undoubtedly intensified [in the early 1900s] due to the depletion of natural prey and expanding livestock presence.” \textit{Id.}

\textsuperscript{81} \textit{See id.} at 4 (“Prior to 2003, the gray wolf was classified by [W.S. 23-1-101(a)(viii)] as a predatory animal. This classification was changed in the 2003 legislative session to a dual status, following delisting by the USFWS, of ‘trophy game animal’ or ‘predatory animal’ depending on the area they occupy.”); \textit{see also} Wyo. Stat. Ann. §§ 23-1-101(a)(xii)(B), -101(b), -108, -304(a) (2009) (classifying wolves as either a trophy game animal or predatory animal upon delisting). The “trophy game animal” status, which applies only to wolves in the northwestern corner of the state, allows wolves to be hunted during designated seasons by those authorized to do so by the State. Outside that area wolves would have no protection under state law. They would not even be managed by the WGFD. \textit{See Wyoming Wolf Management Plan, \textit{supra} note 79, at 4 (“Outside of the aforementioned area, wolves will be classified as predatory animals. The Department will collect certain management data in this area but will not manage nuisance conflicts. Predatory animals are regulated under Title 11, Chapter 6 of the Wyoming Statutes, by the Department of Agriculture.”); \textit{see also id.} at 10, 15 (“In areas of Wyoming where the wolf is classified as a predatory animal, take will not be regulated.”). The plan summarizes “Legal Wolf Mortality” thus:

\begin{quote}
Upon delisting, legal wolf mortality will result from such things as agency removals, public take (i.e., hunting and trapping), or in defense of life or private property. The Department or its authorized agent may lethally remove wolves, when deemed necessary, to mitigate wolf conflicts with wildlife, livestock, or humans (see “Nuisance Wolf Management” section of this plan). Taking wolves in areas where they are designated as predatory animal also will be legal.
\end{quote}

\textit{Id.} at 14.

The plan itself states that the “Department is determined to keep economic [that is, livestock] losses from a recovered wolf population to a minimum.”83 The Wyoming Range and the southern Wind River Range, largely unsettled and undeveloped, are deemed “unsuitable” for wolves solely because sheep grazing is permitted in national forests there.84 The plan acknowledges that “wolf predation may have a negative effect on some [big game] herds and, thus, hunter harvest.” But it reassures hunters (and outfitters) that “impacts to big game are expected to be tolerable” since “most of the packs that reside outside [Yellowstone National Park] and the [National Elk Refuge (NER)] are subject to take under the dual status classification,” i.e., classified as “predatory animals” and subject to being shot on sight.85 “Removal,” the

83 Wyoming Wolf Management Plan, supra note 79, at 32; see also id. at 2 (“Nuisance wolves will be managed ... to minimize conflicts between wolves and humans. The Department will enter into a cooperative agreement with Wildlife Services (WS), which will assist the Department in managing conflicts between wolves and livestock.”). The plan even refers to the need to “minimize wildlife or livestock conflicts” in the northwestern portion of the state where wolves supposedly will be protected. Id. at 11. It provides that after delisting, wolves may be lethally removed when the Department deems it “necessary, to mitigate wolf conflicts with wildlife, livestock, or humans.” Id. at 14 (emphasis added). Further, the Department promises to “pursue all possible funding sources for the livestock compensation program, including Federal or State appropriations, public/private foundations, and other sources.” Id. at 20.

84 Id. at 11. Reflecting that “suitability” is a determination made by the agency, not the wolves, the plan continues: “Several individual and pairs of wolves have attempted to use the lower portion of the Wyoming Range in the last few years. Almost all of them have been removed from the population due to livestock depredations.” Id. The plan further notes that, during the 1974–1980 recovery planning process, one of the criteria used to identify recovery areas was “the absence, if possible, of livestock grazing.” Id. at 9.

85 See id. at 27; see also supra note 81 and accompanying text. Elk numbers in Wyoming actually exceeded the Department’s “objective,” or target population—by 14% statewide in 2007. In fact, the “elk population, number of elk harvested, and elk hunter success rates have steadily increased [over the past 30 years] both before and after wolf reintroduction.” See Tory Taylor & Meredith Taylor, Barstool Mountain Myths: Wolves & Elk Numbers Strong Despite Dire Predictions, WYFile, Apr. 6, 2009, http://wyofile.com/2009/04/barstool-mountain-myths-wolves-elk-numbers-strong-despite-dire-predictions/; see also SMITH ET AL., supra note 38, at 19–20 (reporting Jackson area elk population trends in the 20th century); cf. Press Release, Wyo. Game & Fish Dep’t, Game and Fish Department Comments on Federal Elk and Bison Management Plan (Nov. 4, 2005), available at http://gf.state.wy.us/services/news/press-releases/05/10/14/051014_1.asp (“The entire Jackson Elk Herd, which includes animals on the National Elk Refuge [(NER)] and Grand Teton National Park, is estimated at 13,000 animals. The Game and Fish Department’s population objective for that herd is 11,029 animals.”). Smith et al. observe that, despite conflicts over forage between cattle and elk, Jackson Hole stockmen in the late 1800s and early 1900s did not kill elk as did “frontiersmen” elsewhere. Instead, “stockmen’s associations ... were formed to exterminate wolves.” SMITH ET AL., supra note 38, at 16.
plan states matter-of-factly, “is often the most effective management option for wolves that kill livestock.”

Montana pays comparable heed to the views of ranchers and vocal big-game hunters in its plans for managing wolves and elk. Its elk plan mentions wolves in two contexts: hunters’ concerns about wolves, and the possible need to reduce wolf numbers if elk calf recruitment declines. The plan observes that the “restoration of wolves to western Montana is an emerging factor in elk population management,” which plainly refers to hunter harvest levels. Nowhere does the plan suggest that wolves might have a salutary effect on the health of wild ungulate populations or their habitat.

87 See generally Mont. Dep’t of Fish, Wildlife & Parks, Montana Statewide Elk Management Plan (2004). See also id. at 158 (“Ranchers and some hunters have expressed concern about the presence of wolves.”); id. at 166 (describing establishment of working groups whose objectives include “explot[ing] innovative ways to minimize elk damage to agricultural producers” and “discuss[ing]the potential impact of predators (including wolves) on elk populations”); id. at 264 (“[S]ome hunters and landowners believe wolves have changed the behavior and distribution of elk, making it more difficult to harvest elk.”); id. at 267 (“People are very concerned about the possible impacts of increasing predator populations on elk, particularly the impacts of wolves and grizzly bears. There is a perception that wolves have already made it more difficult for hunters to harvest elk.”); id. at 285 (“There is a perception among hunters and landowners that wolves have changed the behavior and distribution of elk, making it more difficult to harvest elk. Further, the changes in distribution appear to be resulting in elk spending more time occupying areas in or near agricultural croplands, thereby increasing damage complaints.”). One of my favorite observations: “Landowners who have complained of too many elk in the past, are now concerned about the presence of wolves.” Id. at 198.
88 See id. at 47 (“The effects of wolves and other predators on elk populations was [sic] one of the top issues of concern to the public in our scoping for issues relative to this Elk Management Plan revision.”); id. at 47–48 (“In 2002, 81.1% of [interviewees] listed wolves as one of the top 3 issues mentioned by hunters compared to 3.8% in 1996.”); id. at 48 (noting that after delisting, “[i]f there are more than 15 breeding pairs [in Montana], FWP [Montana Department of Fish, Wildlife and Parks] will reduce pack size through liberal management tools, which could include regulated hunting or trapping. Wolf management actions would be paired with other corrective measures to reduce ungulate mortality or enhance recruitment . . . .”); see also id. at 36 (discussing potential reasons for changes in elk calf recruitment rates).
89 Id. at 132.
90 This comment occurs repeatedly: “The degree of impact wolves have on elk populations is unknown at this time, but will be a consideration in future management decisions.” See id. at 236.
91 Instead, the plan states: “When wolves are delisted and Montana assumes management authority for wolf populations, FWP will attempt to balance the needs of both wolf and elk populations with the interests of hunters, non-hunters, and landowners.” Id. at 275. The Department found one good thing to say about wolves in its 2004 report on feedgrounds: “During spring, wolves may improve management by moving elk away from feed-
In fact, nothing is said in any of these Montana or Wyoming documents about the relationship between wolves and elk and the condition of willow and aspen communities. The potential ecological benefits from wolf reestablishment receive no attention. Incredibly, the plans are devoid of any discussion of ecology, much less trophic cascades research.

Livestock producers comprise a tiny fraction of the population; public-land ranchers are an even smaller group. The hunters who oppose wolf reintroduction are a minority of all big game hunters. But the stubbornness of these few has a powerful impact.

Their intransigence, and the agencies’ bias, is even more blatant in winter elk feeding policies.

grounds to spring transitional ranges.” Wyo. Game & Fish Dep’t, Elk Feedgrounds in Wyoming 19 (2004).

92 See Wyo. Game & Fish Dep’t, Strategic Habitat Plan 12 (2009) (“Promot[ing] habitat management that enhances cottonwood and willow galleries, aspen stands, woody draw complexes and healthy shrub communities that benefit wildlife” is one of the strategies the Department has identified for achieving its first habitat-related goal, namely: “Conserve and manage wildlife habitats that are crucial for maintaining terrestrial and aquatic wildlife populations for the present and future.”). While the plan contains no mention of wolves, predators, or trophic cascades, it refers several times to livestock grazing. The Department proposes that it will “[w]ork with landowners, land managers, partners and the public to manage wildlife and livestock numbers that maintain vigorous, healthy and sustainable shrub communities.” Id. at 17. WGFD will also “[w]ork with landowners [and others] on grazing management programs that enhance sustainability of rangelands and wildlife habitat.” Id.


94 Cf. Taylor & Taylor, supra note 85. The Taylors are long-time outfitters in northwestern Wyoming. Tory Taylor was appointed to the Brucellosis Task Force by Wyoming Governor Mike Sullivan in 1999 to represent the Wyoming Wildlife Federation and sportsmen. See Tom Thorne, Historic Review and Update on Previous Committees, Apr. 8, 2004 (listing members of the Task Force).
III. Elk Feedgrounds and Wildlife Disease

The undesirable consequences of supplemental feeding have been recognized for a century. One of Wyoming’s first game wardens urged in 1909, not long after extensive elk feeding began, that elk should not be “‘semidomesticated’” by feeding, as it “‘would soon take them out of the category of wild animals and put them in a class with the elk of eastern game parks.’”95 In 1912 Teddy Roosevelt advised against maintaining unnaturally high populations of elk by feeding.96 Biologist John Craighead warned in 1950 that “drastic corrective measures” were needed to prevent the “eventual extermination” of “preferred browse species” on the National Elk Refuge (NER) by elk concentrated by artificial feeding.97 NER managers and biologists continue to chronicle progressive habitat deterioration: winter browse is increasingly scarce, “favored forage plants” are “universally hedged” or absent, aspen recruitment is nonexistent, and “cascading effects” on bird and small mammal communities have been documented.98 In fact, in 2007 refuge managers concluded: “All of the biological issues identified [on the NER] stem from the winter feeding program.”99

95 See Cory Hatch, Is a Wild Animal Wild When It Can’t Roam?, JACKSON HOLE NEWS & GUIDE, June 17, 2009, http://www.greateryellowstone.org/news/index.php?id=66 (quoting Daniel C. Nowlin). In fact, elk fed and managed like cattle “begin to act very much like cattle . . . . A common name for elk, not widely used but appropriate, is the ‘forest cow.’” Beschta email, supra note 44. Conversely, I have heard wildlife biologists refer to cattle as “slow elk.” Rather than feeding elk, Warden Nowlin had proposed in 1906 that a refuge for elk and other wildlife be established in the Gros Ventre Valley; the Wyoming Legislature passed a memorial requesting a grant “comprising six townships of public land” for that purpose. But the idea was opposed by resident stockmen, and the “proposal died.” See SMITH ET AL., supra note 38, at 18. Two years later Nowlin and E.A. Preble, a Bureau of Biological Survey scientist, wrote a report recommending the “reservation of a permanent winter range in Jackson Hole, calling it ‘essential for the proper protection of the elk.’”


96 See SMITH ET AL., supra note 38, at 132 (quoting Roosevelt’s 1912 Comments on Yellowstone Elk).

97 See id. at vii.

98 See, e.g., id. at 133, 134.

99 U.S. FISH & WILDLIFE SERV., & NAT’L PARK SERV., BISON AND ELK MANAGEMENT PLAN NATIONAL ELK REFUGE, GRAND TETON NATIONAL PARK, at vi (2007) [hereinafter BISON AND ELK PLAN] (emphasis added), available at http://www.fws.gov/bisonandelkplan/Final%20Plan/Bison%20and%20Elk%20Management%20Plan%20FINAL%20PLAN.htm. The problems identified were high levels of brucellosis and increased risk of other major diseases in elk and bison, serious habitat damage, and impacts on other refuge wildlife, particularly scavengers. See id. Furthermore, feeding increases elk and bison populations, which “add[s] to the overall problem.” See id.
Nevertheless, every winter some 20,000 elk are fed hay and alfalfa pellets on the NER and on twenty-two state-operated feedgrounds in northwest Wyoming.100 Why? To put it simply—and delicately, as the Wyoming Game and Fish Department (WGFD or Department) does on its website—“Elk feedgrounds are a way to reduce the damage problems while maintaining the number of elk the public prefers.”101 The Department deemed it unnecessary to explain “the damage problems,” but if you suspect a connection with the ranching industry, you are on the right track.102 By feeding, WGFD aims to avoid even the potential for damage to private ranchlands or commingling of elk and cattle.103 Motivations for feeding on the NER are similar.104

100 See Wyo. Game & Fish Dep’t, Elk Special Management Permit Information, http://
gf.state.wy.us/services/education/feedground.asp (last visited Apr. 15, 2010) [hereinafter Elk Permit Information] (reporting that there are twenty-three feedgrounds in Wyoming, including the NER, and that “about 22,000” of the “[a]pproximately 30,000 elk [that] live in the Jackson-Pinedale region . . . use feedgrounds during the winter”); see also Wyo. Game & Fish Dep’t, supra note 91, at 4. Twenty-eight “elk hunt areas are associated with Wyoming’s 23 elk feedgrounds.” Elk Permit Information, supra.

101 Elk Permit Information, supra note 100.

102 According to the Wyoming Game and Fish Department, feedgrounds are necessary to protect livestock from wildlife diseases. See Wyo. Game & Fish Dep’t, supra note 91, at 10 (“[F]eedgrounds provide the only opportunity to effectively vaccinate elk [against brucellosis . . . .]”); id. at 10–11 (“[F]eedgrounds . . . are one of the best methods to prevent co-mingling of elk and livestock during winter months.”); id. at 7 (“Nearly all of the 22 state-operated feedgrounds were established to prevent elk damage to stored hay crops and prevent co-mingling with livestock on private lands.”); id. at 15 (“Presence of elk on feedgrounds provides accessibility to elk to vaccinate them against brucellosis, thus reducing transmission of brucellosis among elk and the risk of transmission to cattle.”)). Curiously, however, WGFD has no legislative mandate to protect domestic livestock. The WSGA intervened in litigation aimed at closing elk feedgrounds, and Jim Magagna, WSGA executive vice president, has publicly stated that “the association has many common interests with the state Game and Fish Department on the feedgrounds issue.” Judge Allows Wyoming Stock Growers into Elk Feeding Lawsuit, BILLINGS GAZETTE, June 6, 2006, http://billingsgazette.com/articles/2006/06/06/news/wyoming/21-brucellosis.txt.

103 Wyo. Game & Fish Dep’t, supra note 91, at 22 (“If the potential for damage on private lands exists, elk are either moved to adjacent feedgrounds and/or feeding is initiated early to attract elk away from potential damage/co-mingling conflicts.”); id. at 7 (“Nearly all of the 22 state-operated feedgrounds were established to prevent elk damage to stored hay crops and prevent co-mingling with livestock on private lands.”); id. at 14 (“Because of the reservoir of brucellosis in elk and bison of the [greater Yellowstone area], producers in Wyoming, Idaho, and Montana will continue to have to vaccinate their cattle and participate in surveillance programs indefinitely. These activities are expensive for producers . . . .”); see also U.S. Forest Serv., U.S. Dep’t of Agric., DRAFT ENVIRONMENTAL IMPACT STATEMENT, LONG TERM SPECIAL USE AUTHORIZATION FOR WYOMING GAME AND FISH COMMISSION TO USE NATIONAL FOREST SYSTEM LAND FOR THEIR WINTER ELK MANAGEMENT ACTIVITIES 7–8 (2008) [hereinafter DEIS LONG TERM SPECIAL USE AUTHORIZATION] (“A major role of elk feedgrounds today is to reduce the commingling of elk and cattle for concerns over elk-to-cattle brucellosis transmission. Thus, elk feedgrounds are . . . main-
Winter feeding of elk typifies the long discredited “‘agricultural paradigm’” of wildlife management, which treats game species as crops, “employ[ing] simplified concepts of ecosystems in an attempt to increase yields.”

Olaus and Mardy Murie, biologists and long-time Jackson, Wyoming, residents, wrote:

People do not want to provide enough natural range for wildlife. Sportsmen demand bigger and bigger game herds but do not trouble to provide living space for them in the way nature intended. They want to simply stuff the animals with hay, the easy way—and that is supposed to settle all problems. That’s what’s the trouble with the elk!

This “production-consumption” approach to wildlife management “is not based on scientific principle [or] sustainable resource management policy.” In the case of the feedgrounds, it is dictated by sociopolitical considerations. The Department rationalizes the feedgrounds as “a complex
biological, social, economic and political issue.” 108 “What started as a logical solution to some very real problems [for example, elk die-offs and damage to stored hay] has become one of the most complex and controversial wildlife management challenges of the 21st century.” 109

Today, primarily because of new knowledge about disease risks, supplemental feeding is criticized nearly universally by biologists. 110 The feedlots are like huge petri dishes, providing ideal conditions for propagating disease. 111 Six viral, bacterial, and parasite-borne diseases—that we know of—occur in the NER in northwestern Wyoming. 112 According


109 Wyo. Game & Fish Dep’t, supra note 91, at 2.

110 See, e.g., Markus J. Peterson, Chronic Wasting Disease and the Greater Yellowstone Area 15 (2005) [hereinafter Peterson, Greater Yellowstone Area]; Markus J. Peterson, Dep’t of the Interior, Infectious Agents of Concern for the Jackson Hole Elk and Bison Herds: An Ecological Perspective 31 (2005) [hereinafter Peterson, Infectious Agents]. Dr. Peterson, a wildlife disease specialist and associate professor in the Department of Wildlife and Fisheries Sciences at Texas A&M University, was hired by Greater Yellowstone Coalition to prepare a detailed report on disease risks to the NER for the Elk and Bison EIS. See Peterson, Greater Yellowstone Area, supra, at i, 1. Dr. Tom Roffe, regional chief of wildlife health for U.S. Fish and Wildlife Service, asserted that he was unable to “find a single wildlife health professional outside of the [WGFD] who advocates the feeding of wildlife.” Memorandum in Support of Plaintiffs’ Motion for Summary Judgment at 6-7, Defenders of Wildlife v. Salazar, No. 08-cv-00945 (RJL) (D.D.C. Feb. 18, 2009) [hereinafter Defenders of Wildlife v. Salazar Memo] available at http://www.defenders.org/resources/publications/programs_and_policy/in_the_courts/ elk_refuge_opening_brief.pdf (citing and quoting a May 15, 2006 memo by Dr. Roffe). The USFWS publicly acknowledged that the high levels of brucellosis in refuge elk and bison, as well as the increased risk of other major diseases, such as CWD, are due to winter feeding. See supra note 99 and accompanying text. The lead author on a recent study, which documented that CWD prions are spread in feces, stated that the evidence “likely has important implications for feedgrounds . . . ‘If you think of areas where these animals congest, you would find higher concentrations of feces in those areas,’ he said. ‘Feedgrounds would be a very good way of spreading this disease.’” Cory Hatch, Feces on Feedgrounds Could Spread Wasting Disease; Officials Call for Phaseout of Feeding Elk Herds, Jackson Hole News & Guide, Sept. 16, 2009, http://www.jhnewsandguide.com/article.php?art_id=5068 (quoting Erdem Tamgüney, assistant professor of neurodegenerative diseases at University of California-San Francisco); see also Gültėkin Tamgüney et al., Asymptomatic Deer Excrete Infectious Prions in Feces, 461 Nature 529, 529–31 (2009); infra note 127.


112 See Bison and Elk Plan, supra note 99, at 129–34. The plan also discusses several other diseases and parasites that are “undocumented” but which could be present or appear in the future. See id. at 134–39.
to Dr. Tom Roffe, regional chief of wildlife health for U.S. Fish and Wildlife Service: “feeding elk is not management based on sound science related to biology and ecology.”\textsuperscript{113} In fact, “crowding of animals is at the heart of the transmission–infection–disease perpetuation cycle.”\textsuperscript{114} “If you tried to design a system that would magnify wildlife diseases, you couldn’t do much better than what we’re doing now.”\textsuperscript{115}

One of these diseases is brucellosis. Scientists have recognized for at least thirty years that “artificial concentration of elk during winter and early spring perpetuates the disease brucellosis.”\textsuperscript{116} This bacterial disease was introduced to elk (and bison) from cattle,\textsuperscript{117} and stock owners fear that these wild ungulates will transmit the disease back to cattle herds, from which it was eradicated at great cost.

The irony here is thick: The effects of brucellosis in elk are relatively benign, and only elk that frequent feedgrounds carry the disease. Also, no case of Yellowstone National Park bison transmitting the disease to cattle has ever been documented.\textsuperscript{118} But the chosen “solution”

\begin{itemize}
  \item \textsuperscript{113} See Defenders of Wildlife v. Salazar Memo, supra note 110, at 6 (emphasis added) (quoting Roffe memo of May 15, 2006).
  \item \textsuperscript{114} Bruce L. Smith, Disease and Winter Feeding of Elk and Bison: A Review and Recommendations Pertinent to the Jackson Bison and Elk Management Plan and Environmental Impact Statement 7 (2005).
  \item \textsuperscript{115} Kirk Johnson, Wyoming Thinks Twice About Feeding the Elk, N.Y. TIMES, Feb. 18, 2009, at A14 (quoting Dr. Thomas J. Roffe).
  \item \textsuperscript{116} DEIS Long Term Special Use Authorization, supra note 103, at 7 (citing E.T. Thorne et al., Brucellosis in Elk. II. Clinical Effects and Means of Transmission as Determined Through Artificial Infections, 14 J. WILDLIFE DISEASES 280 (1978)).
  \item \textsuperscript{117} See Mary Meagher & Margaret E. Meyer, On the Origin of Brucellosis in Bison of Yellowstone National Park: A Review, 8 CONSERVATION BIOLOGY 645, 645 (1994).
  \item \textsuperscript{118} See Kilpatrick et al., supra note 93, at 477. There seem few limits to the State of Wyoming’s willingness to subsidize the livestock industry. As part of the State’s continuing surveillance of brucellosis in Wyoming elk, WGF8 sends hunters a blood vial and postage-free mailer, along with a letter asking them to take a blood sample from any elk harvested and send it to the Department for testing. Having drawn an elk tag for the 2009 season, I received one of these packets even though my hunt area is in southeastern Wyoming, at least 250 miles (straight-line distance) from the nearest known incidence of brucellosis in elk! Worried that wolves carrying brucellosis could “shut [the Wyoming cattle industry] all down,” the Wyoming Senate passed a bill in 2009 to appropriate $45,000 to sample and test animals for the disease. See Matt Joyce, Lawmakers Want to Test Wolves for Brucellosis, CASPER STAR, TRIB, Feb. 24, 2009, http://trib.com/news/state-and-regional/article_9b4fbc60-6795-52ef-92d9-6bf870ff4fde.html (quoting Sen. Kit Jennings, one of the sponsors of Senate File 87); Angus M. Thuermer Jr., Wolves Brucellosis-Free, JACKSON HOLE NEWS & GUIDE, Mar. 14, 2009, http://www.jhnewsandguide.com/article.php?art_id=4357. Most biologists and veterinarians, however, “consider canids to be largely immune from contracting or spreading the [Brucella] bacteria.” Thuermer, supra. In 2009, the University of Wyoming Trustees approved a budget increase for brucellosis research. Press Release, University of Wyoming, University of Wyoming Trustees Approve Spending Plan (May 30, 2009), available at http://www.wyoming.edu/news/showrelease.asp?id=51701. Within days of this announcement, the University of...
for avoiding even the slight possibility of infection is to maintain the feedgrounds, which both increase the prevalence of brucellosis in elk, thus increasing the possibility of transmission, and make elk more prone to other, fatal diseases. And there’s more: feedgrounds are far from the most cost effective solution to the brucellosis problem.

Wyoming also announced “cuts in spending in support budgets across the university, a hiring squeeze, staff layoffs and elimination or deferrals of some initiatives” designed to “achieve the 10 percent budget cut announced by Gov. Freudenthal for Fiscal Year 2010.” Press Release, University of Wyoming, University Response to State Budget Reductions (June 4, 2009), available at http://www.uwyo.edu/news/showrelease.asp?id=31864; see also Press Release, University of Wyoming, UW Trustees Approve Biennium Budget Request (Aug. 27, 2009), available at http://wyoming.edu/news/showrelease.asp?id=34202 (reporting that the 2009–2010 UW budget request, which continues the “budget reductions enacted in June [2009],” “includes only two requests,” one of which is for “$814,000 . . . to develop a more effective vaccine and more reliable diagnostic test for brucellosis”).

The WGFD’s reasoning is truly circular: the agency concedes that “data support the contention that feedgrounds increase the probability of disease transmission,” but it argues that “[p]resence of elk on feedgrounds provides accessibility to elk to vaccinate them against brucellosis, thus reducing transmission of brucellosis among elk”! See Wyo. Game & Fish Dep’t, supra note 91, at 10, 15.

Bruce Smith explains: “The conditions of animal crowding, shared feedsites, bed-sites, water sources, and accumulated excreta on feedgrounds promote relatively unsanitary conditions that benefit many pathogens and promote transmission of diseases which have a density dependent component. This explains why brucellosis is maintained in feed-ground elk, but not those unassociated with feedgrounds . . . .” Smith, supra note 114, at 15. See generally Smith, Winter Feeding, supra note 95. According to WGFD:

Seroprevalence data [for brucellosis] collected from 12 feedgrounds where elk have been vaccinated averaged 23.6% (range: 13–30%); the average sero-prevalence of elk from the unvaccinated Dell Creek feedground has been 32%. The seroprevalence of elk not frequenting feedgrounds has averaged 2.3%. These data support the contention that feedgrounds increase the probability of disease transmission.

Wyo. Game & Fish Dep’t, supra note 91, at 10; accord Bison and Elk Plan, supra note 99, at 70 (“In areas where both elk and bison are present, and there is no supplemental feeding program, interspecies transmission [of brucellosis] is low.”); Matthew J. Ferrari & Robert A. Gartott, Bison and Elk: Brucellosis Seroprevalence on a Shared Winter Range, 66 J. WILDLIFE MGMT. 1246, 1252 (2002). Vaccinating elk against brucellosis is controversial. See, e.g., Wyo. Game & Fish Dep’t, supra note 91, at 17 (reporting that “data indicate strain 19 vaccination may have influenced declines in seroprevalence on several feedgrounds,” but warning that the data should “be interpreted with caution”); Thomas J. Roffe et al., Efficacy of Single Calfhood Vaccination of Elk with Brucella abortus Strain 19, 68 J. WILDLIFE MGMT. 830, 830 (2004) (concluding that a single vaccination “has low efficacy, will likely have only little to moderate effect on *Brucella* prevalence in elk, and is unlikely to eradicate the disease in wildlife” of the Greater Yellowstone Area); Ruffin Prevost, Brucellosis Fighters Seeks Stable Funding, BILLINGS GAZETTE, May 14, 2009, http://billingsgazette.com/news/state-and-regional/wyoming/article_05f96815-1c38-5adb-a933-7cb27b185b60.html (reporting that “elk at a feedground where vaccinations were made every year for the past decade tested nearly identically for the disease as those at a second feedground where no vaccinations were made over the same period”); Animal & Plant Health Inspection Serv. [APHIS], U.S. Dep’t of Agric., Brucellosis and Yel-
Dr. Bruce Smith, who spent twenty-one years on the NER and retired as senior biologist, warned in 2001:

Biologically, brucellosis is a red flag. It warns us that out of a million elk in North America, only those associated with the winter feeding programs in western Wyoming and adjacent eastern Idaho maintain this disease at any significant prevalence. It warns us that the conditions experienced by elk concentrated on feedgrounds are ripe for the transmission of other, more pathogenic diseases.122

The disease of greatest concern now is chronic wasting disease (CWD). CWD is a transmissible spongiform encephalopathy (TSE), like mad cow disease, which affects cervids (deer, elk, and moose). It is always fatal.123 When CWD becomes established on the feedgrounds (if it

lowstone Bison 4 [n.d.], http://www.aphis.usda.gov/animal_health/animal_dis_spec/cattle/downloads/cattle-bison.pdf (“Can Brucellosis Be Eradicated From Yellowstone Wildlife? Yes.”). According to University of Wyoming College of Agriculture Dean Frank Galey, vaccination is also expensive: “Just to develop a decent new vaccine could cost between $10 million to $30 million, and could take 10 to 20 years.” Id. Terry Kreeger, veterinary services supervisor for WGFD “said more than $5 million in combined state and federal funds have been spent over the past nine years in Wyoming on wildlife brucellosis vaccination and research.” Id.

121 See Kilpatrick, supra note 93; infra notes 151–58 and accompanying text; see also Tom Thorne, Presentation to the Governor’s Brucellosis Coordination Team (Apr. 8, 2004), available at http://www.wyomingbrucellosis.com/_meeting_minutes/BCT2004minutes 2ndMtg 040804.doc (citing Brucellosis Task Force recommendation to “[c]onsider impacts compensation [to livestock producers] might have on eradication [of brucellosis] because compensation could be cheaper than eradication”). A proposal by the U.S. Department of Agriculture’s Animal and Plant Health Inspection Service (APHIS) to establish a National Brucellosis Elimination Zone around Yellowstone would “facilitate the elimination of brucellosis from livestock.” DEBBI A. DONCH & ARNOLD A. GERTONSON, U.S. DEP’T OF AGRIC., STATUS REPORT FISCAL YEAR 2008, at 4 (2008). But it is being resisted by area livestock producers because of the market “stigma” on those cattle. See Prevost, supra note 120 (citing Jerry Diemer, western regional director for APHIS). A subsequent “concept paper” revised the terminology. APHIS now proposes to establish a “disease management area” encompassing the Greater Yellowstone Area, which “will be known as a ‘designated surveillance area.’” APHIS, A Concept Paper for a New Direction for the Bovine Brucellosis Program Animal and Plant Health Inspection Service Veterinary Services 7–8 (Sept. 2009), available at http://www.regulations.gov/search/Regs/contentStreamer?objectId=0900006480a26f44&disposition=attachment&contentType=pdf.

122 Smith, Winter Feeding, supra note 95, at 184 (emphasis added).

123 See, e.g., Peterson, Greater Yellowstone Area, supra note 110, at 12 (“CWD is invariably fatal once clinical signs develop.”); cf. id. at 6 (“At present, traditional veterinary approaches to therapy and prevention do not apply to CWD and other prion diseases. No treatment is available to prevent infections or recover affected animals; similarly, no vaccine is available to prevent CWD infection in deer or elk” (quoting M.W. Miller & E.S. Williams, Chronic Wasting Disease of Cervids, in Mad Cow Disease and Related Spong-
is not already there\textsuperscript{124}, the disease “would likely spread across the 18-

million-acre Greater Yellowstone Ecosystem.”\textsuperscript{125} Thousands of elk, as well as deer and moose, would die,\textsuperscript{126} and habitat would be contami-

FORM ENCEPHALOPATHIES 193, 204 (D. A. Harris ed., 2004)). Remarkably, WGFD’s feeding

policy seems premised in part on an assumption that “eventually we will likely learn how to

slow or stop the spread of CWD, how to protect animals from contracting CWD, or even

how to cure animals already infected with the disease.” See Wyo. GAME & Fish Dep’t, supra

note 91, at 11. WGFD official Eric Keszler stated publicly that his agency is “not convinced

that CWD in an elk feedground population is going to be devastating to that population.”


\textsuperscript{124} See Peterson, Greater Yellowstone Area, supra note 110, at 9 (“Assuming CWD

does not already occur in the heart of the GYA [Greater Yellowstone Area], its most likely

point of entry would be via infected cervids moving into Jackson Hole along the Gross

Ventre drainage.”); Defenders of Wildlife v. Salazar Memo, supra note 110, at 11 (indicating

that CWD may already be present but undetected in the NER and citing Dr. Tom Roffe). “CWD is not known to occur in free-roaming cervids (members of the deer family) in Montana or Idaho,” but it has been detected in mule deer east and south of the Greater

Yellowstone area, in central and southeastern Wyoming, in northeast Utah, and in north-

west and north-central Colorado. Peterson, Greater Yellowstone Area, supra note 110, at 8. In 2008 CWD was detected in a moose from Star Valley, about thirteen to eighteen miles from two feedgrounds and six miles from the Idaho border. See Merrill, supra note 111. The moose, which was euthanized, was dying from a parasite infection. Id. This discovery, the first west of the Continental Divide in Wyoming, was especially worrying because moose were thought to be less vulnerable to CWD infection than are deer or elk. See Jason Kauffman, Elk Disease Moves West, Idaho Mountain Express, Nov. 21, 2008, http://

www.mtexpress.com/index2.php?ID=2005123724 (CWD “is considered extremely rare in

moose. According to Wyoming Game and Fish, only three other wild moose in North

America have tested positive for the disease, all of them in Colorado.”); see also Press Re-

lease, Nat’l Ass’n of State Dep’ts of Agric., APHIS Proposes to Amend Final Rule on


\textsuperscript{125} See Defenders of Wildlife v. Salazar Memo, supra note 110, at 12 (citing Peterson,

Infectious Agents, supra note 110, at 52; Smith, supra note 114, at 16). “Elk and deer

herds in the GYA interchange individuals with other herds of the same species to the

north, south, east, and west. They also share ranges seasonally.” Peterson, Greater Yel-

lowstone Area, supra note 110, at 8. Thus, “mountainous terrain, rivers, or other apparent

topographic barriers should not be expected to prevent the spread of CWD to the GYA.” Id.; see also supra note 124. A recent study documented that CWD prions are shed in the feces of CWD-infected deer, even those that do not yet display symptoms. See Tam-
güney et al., supra note 110, at 531. The researchers concluded that “the faecal–oral route
[is] a likely natural mechanism for the transmission of CWD prions among deer and other

susceptible cervid species,” and that prion “contamination of forest, shrub-steppe and

grassland habitats may be largely responsible for horizontal transmission of CWD among

mule deer and perhaps other species.” Id. at 531–32.

\textsuperscript{126} In fact, some researchers have suggested that “local extinctions of affected deer

populations might eventually occur.” See Peterson, Greater Yellowstone Area, supra

note 110, at 5 (citing J.E. Gross & M.W. Miller, Chronic Wasting Disease in Mule Deer: Disease

Dynamics and Control, 65 J. Wildlife Mgmt. 205 (2001)). CWD prevalence rates among

free-ranging deer appear to be higher than among elk. For example, twenty-nine percent

of mule deer around Boulder, Colorado, are infected with CWD. Open Space Bd. of Trs., City
nated indefinitely with infectious prions. Indeed, it is “not known whether environments contaminated with TSE agents can ever be completely disinfected.” “Options for managing CWD once it exists in free-roaming cervid populations are practically nonexistent.”

Experts agree that CWD cannot be eradicated, yet it may be possible to slow and perhaps interrupt its spread. “Thus the emphasis should be placed on preventing [CWD] from becoming established in naïve cervid populations.” Reducing animal density by banning supplemental feeding is among the experts’ top recommendations.

of Boulder, Chronic Wasting Disease Study Results 1 (Dec. 10, 2008), available at http://www.bouldercolorado.gov/files/openspace/pdf_osbtmemos/memo.pdf. Peterson suggests an explanation for such a high prevalence rate:

[Some researchers have] found that CWD prevalence in mule deer was almost twice as high in developed as compared to undeveloped areas in north-central Colorado due to land-use practices that fostered congregation and/or sedentary behavior in urban mule deer. Specifically, they suggested that artificial feeding, ornamental vegetation, decreased predation, and decreased human harvest associated with urbanization, as well as deer congregation in pockets of remaining habitat left behind after development, probably lead to increased CWD transmission.

Peterson, Greater Yellowstone Area, supra note 110, at 5 (citing M. L. Farnsworth et al., Human Land Use Influences Chronic Wasting Disease Prevalence in Mule Deer, 15 Ecological Applications 119 (2005)).

127 See Smith, supra note 114, at 10 (“A remarkable characteristic of these non-living proteins is that they are highly resistant to environmental degradation, and can be indirectly transmitted to other animals through excreta, contaminated soil, and decomposing carcasses, as well as by direct animal to animal contact.”) (citations omitted); id. at 19 (“Environmental contamination with the infectious agent is a particularly insidious characteristic of CWD where cervids are crowded.”); Sandra Blakeslee, Study Spells Out Spread of Brain Illness in Animals, N.Y. Times, Sept. 10, 2009, at A24 (reporting that “prions tended to bind to clay in soil and to persist indefinitely”). See generally Christina J. Sigurdson, A Prion Disease of Cervids: Chronic Wasting Disease, 39 Veterinary Res. 41 (2008) (discussing the various mechanisms of CWD transmission and its persistence in the environment).

128 See Smith, supra note 114, at 19 (citing Elizabeth S. Williams et al., Chronic Wasting Disease of Deer and Elk: A Review with Recommendations for Management, 66 J. Wildlife Mgmt. 551 (2002)).

129 Peterson, Greater Yellowstone Area, supra note 110, at 6.

130 See, e.g., Sigurdson, supra note 127, at 9–10; see also Blakeslee, supra note 127 (“[T]here is no chance chronic wasting disease will be eradicated, [Dr. Judd Aiken, prion expert and director of the Alberta, Canada, Veterinary Research Institute] said. Outside the laboratory, nothing can inactivate prions bound to soil. They are also impervious to radiation.”).

131 Peterson, Greater Yellowstone Area, supra note 110, at 6.

132 See, e.g., Williams et al., supra note 128, at 559; Smith, supra note 114, at 18 (“Reducing population density is a recognized method for disease control and is based on the idea that infectious disease is density dependent. . . . Phasing out the winter feeding program will limit disease transmission and prevalence in the NER and GTNP.”); cf. Peterson, Greater Yellowstone Area, supra note 110, at 4 (“[I]t appears certain that [CWD] transmission, whether direct, indirect, or both, is dependent to some degree on the den-
Several states, including Colorado, Montana, Nebraska, and Wisconsin, have “implemented programs to reduce densities and ban private feeding of cervids.” But in Wyoming, Smith explains, the agencies “may see winter feeding as the least painful remedy for producing immediate results to appease differing groups: agricultural interests that desire rapid resolution to crop damage, and pro-wildlife constituencies that oppose reductions in elk populations despite wildlife-human conflicts or dwindling habitat.” One writer denounced this choice bluntly:

It is apparently easier to condemn the nation’s greatest elk herd to months on a reservation where they may be decimated by disease than it is to find ways to restore their natural habits and environment the way we have in Yellowstone, where elk, bison, and wolves co-exist and chronic wasting disease does not.

Smith suggested that “[r]emoval of livestock from the [Greater Yellowstone Area] or grazing only by neutered yearlings would remove the risk of brucellosis infections of concern to federal and state agricultural interests.” But he concluded: “Both seem unlikely.” The truth is, winter feeding continues because livestock producers and a few hunters and outfitters demand it and because WGFD “has helped sell this resource management approach to the public.”

sity of susceptible hosts. . . . In situations where high cervid densities are maintained by humans, CWD eventually spreads throughout most of the population.”). Even WGFD, which feeds thousands of elk every winter, advises others not to feed elk. Indeed, one component of its “management plan” for CWD is to “seek legislation prohibiting intentional private feeding of big game animals, including deer, elk and moose.” CWD Plan, supra note 108, at 3; see also Ronald W. Opsahl, Chronic Wasting Disease of Deer and Elk: A Call for National Management, 33 Envtl. L. 1059, 1080 (2003) (“[M]any states have implemented complex regulations governing baiting or feeding wildlife . . . .”).

Smith, supra note 114, at 18. In addition, “[i]n 2003 Teton County and the town of Jackson, Wyoming adopted citizen-sponsored bans on private feeding of wild ungulates.” Id. Idaho operates one elk feedground. Kauffman, supra note 124 (“Fish and Game operates just one feeding area for elk midway up the Warm Springs Creek drainage in an area called the Bullwhacker feed site.”).

Smith, Winter Feeding, supra note 95, at 185–86. Among the WSGA’s objections to eliminating winter feeding is that it would “increas[e] the management responsibilities of WSGA’s members and the corresponding operation costs.” WSGA Motion to Intervene, supra note 93, at 9.


Smith, supra note 114, at 6.

Id.

Bob Wharff, Wyoming executive director of Sportsmen for Fish and Wildlife, a pro-hunting group that opposes any reduction in elk populations, called feeding “a moral
By the mid-1950s (if not considerably earlier140), elk in this region suffered from an “almost total lack of natural winter range.”141 Not all state and federal officials have favored feeding as a solution, however. For instance, Wyoming Game and Fish biologist Chester Andersen recognized that “artificial feeding . . . constitutes both a symptom of abused range and a cause.”142 That abuse included ranch and residential development, degradation of public-land winter ranges, and obstruction of migration routes by highways and fences.143 Range conditions, not feeding, Anderson argued, “should rightfully be the principal criteria for the

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139 E-mail from Dr. Bruce L. Smith, retired senior biologist, National Elk Refuge, to author (Dec. 9, 2008, 13:40 MST) (on file with author).
140 See, e.g., SMITH ET AL., supra note 38, at 15 (“By 1909, homesteaders and ranchers had fenced much of the elk winter range within the Jackson Hole valley bottomlands and converted it to [use] . . . for domestic livestock production.”); BISON AND ELK PLAN, supra note 99, at 10 (reporting that winter range to support Jackson Hole elk has been “insufficient . . . since the early 1900s.” (citation omitted)).
142 Id. at 50–52.
143 Several writers have described the historical migrations of elk between summer range at higher elevations in the Greater Yellowstone Area and lower elevation winter ranges in central and southwestern Wyoming. See, e.g., SMITH ET AL., supra note 38, at 15–16 (reporting that by 1912 “migration corridors to their traditional desert winter ranges were usurped by Euro-American settlement and largely lost from the herd’s memory”); Christina M. Cromley, Historical Elk Migrations Around Jackson Hole, Wyoming, 104 YALE FORESTRY & ENVTL. STUD. BULL. 53, 54 (2000) (summarizing sources as reporting that “fences, poaching, and easily accessible artificial feed in Jackson Hole [were] factors that contributed to the end of the migrations”). In contrast, Jackson area cattle enjoy a designated “driveway” through national park, national forest and national refuge lands from Moran to Ditch Creek. See Bison Calving Area and Livestock Allotments (map), in BISON AND ELK PLAN, supra note 99, available at http://www.fws.gov/bisonandelkplan/Final%20Plan/Maps/Bison%20Calving%20Areas%20and%20Livestock%20Allotments.pdf.
size and distribution of the [elk] herd. . . . There are no reasonable justifications for continued downward trends in range condition.”

Nearly fifty years later, the senior biologist at the NER wrote:

The notion of maintaining population levels in the face of the erosion of habitat is simply unrealistic, at least from an ecological perspective. Manipulating elk populations in ways that border on semi-domestication, such as feeding and fencing them, may permit numbers to be artificially maintained on an eroded habitat base, but at what costs?

A member of the National Resource Council committee tasked with studying conditions on the NER made the analogy to cattle explicit: “To expect that elk herds, blocked from migrating and concentrated through artificial feeding do not cause the same changes in woody plant condition as cattle would under these same conditions is completely inconsistent with the western experience.”

With no change in management, worsening conditions were inevitable. In 2009, elk either cannot get to their native winter ranges or are not allowed to remain there. They are intentionally funneled by fencing; hazed by horseback riders, snowmobiles, or helicopters; or killed to prevent damage to private property and to save public-land forage for livestock.

Cattle ranchers generally do not favor proposals to buy out

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144 See Anderson, supra note 141, at 12.

145 Smith, Winter Feeding, supra note 95, at 186. Smith outlines the costs of feeding elk, including economic costs, effects on habitat, elk behavior changes, and disease. See id. at 178–84.

146 Smith et al., supra note 38, at 135 (quoting riparian ecologist Dr. William Platts); see also supra notes 36–58 and accompanying text (describing effects of browsing by domestic and wild ungulates).

147 See Wyo. Game & Fish Dep’t, supra note 91, at 18.

In some situations elk are actually hazed away from hay crops using pyrotechnics [sic; presumably pyrotechnics, e.g., use of firecrackers]. Often elk have to be physically moved or herded from cattle feedlines, typically through the use of snowmobiles or helicopters. In more severe damage situations where elk cannot be readily moved to a proper wintering area, some elk are shot. Elk may be harvested by hunters through late season depredation hunts on private lands or in extreme cases, by Game and Fish personnel through the use of kill permits.

Id. Exact figures for fencing are hard to come by, but the WGFD has built or funded the construction of hundreds of miles of fencing (statewide) to exclude elk from private property. In 2003 WGFD reported that it was responsible for maintenance of “885 miles of fence (8’ elk fence and stock fence)” on “410,000 acres of lands managed for wildlife habitat and public recreational opportunity.” See Wyo. Game & Fish Dep’t, Wyoming State Government Annual Report 2003, at 3.110 (2003), available at http://www-wsl.state.wy.
federal grazing permits, much less to acquire private lands to provide habitat for elk.148

Are there alternatives to feedgrounds today? Yes, the WGFD admits, but “it would take a reduction in elk numbers or elimination of livestock use to eliminate feeding as a management tool.”149 This single sentence constitutes the complete discussion of these options in the agency’s 2004 report on feedgrounds. Even elk “habitat improvements ... are not likely to ... allow phasing out of elk feedgrounds,” the agency reasons, because “the need to prevent damage to stored crops and co-mingling of elk and livestock ... reduce[s] the overall effectiveness of habitat improvement efforts.”150

The State of Wyoming has spent millions of dollars on supplemental feeding, which maintains artificially high populations of elk,151 exceeding even WGFD population objectives.152 Annual feedground pro-


149 WYO. GAME & FISH DEP’T, supra note 91, at 19. Alternatives to feedings are discussed in Smith, WINTER FEEDING, supra note 95, at 185–86. See also BISON AND ELK PLAN, supra note 99, at 312 (discussing measures to mitigate the consequences of reduction in winter feeding and possible effects).

150 WYO. GAME & FISH DEP’T, supra note 91, at 22 (emphasis added).

151 See id. at 4. “One additional outcome of the supplemental feeding program has been the near elimination of natural over-winter mortality for elk populations in northwest Wyoming.” Id. at 7. Without feeding, elk populations would be limited by their constricted winter range. See id. at 2. Summer range is not limiting. See id.

152 See supra text at note 85. It should be noted that population objectives reflect hunter demands as well as landowner (rancher) concerns about private property. See Whitney Royster, AGENCY MOVES ON DISEASE PLANS, CASPER STAR TRIB., July 31, 2006, http://trib.com/news/top_story/article_c56b1ece-f048-5069-bf7f-306ea314cb37.html (“Options are tweaked for each [elk] herd unit based on input from livestock producers in the area.”); cf. Elk Permit
gram costs are in the neighborhood of $1.5 million dollars. In addition to buying hay and employing people to do the feeding, the Department builds fences, hires helicopters to haze elk away from winter range, vaccinates elk on feedgrounds, and conducts a “test-and-slaughter program,” which involves trapping, testing, and killing cow elk that test positive for brucellosis. Over the first five years of the program, agency biologists “captured 1845 elk and slaughtered 162, of which about half were infected.” This equates to about $13,000 per infected animal. In addition, Wyoming conducts brucellosis-related...
research,¹⁵⁷ and it shares with the U.S. Fish and Wildlife Service the cost of feeding on the NER. During the 2007–2008 winter, the cost of alfalfa pellets was about $803,600.¹⁵⁸

Wyoming’s largesse on behalf of livestock producers is longstanding and perhaps unrivaled. A 1952 audit of the Game and Fish Commission by the Wildlife Management Institute reported:

In previous studies of the fish and game laws of many states, no instance has been found in which the laws give so much special consideration to livestock operators at the expense of the fish and game resources as is found in Wyoming . . . . In some cases the earmarking of Fish and Game funds for these purposes by legislative action has so many undesirable features that it is difficult to believe that any legislature having any knowledge of or interest in the valuable fish and game resources of the state will continue it.¹⁵⁹

¹⁵⁷ See Prevost, supra note 120 (“Kreeger said more than $5 million in combined state and federal funds have been spent over the past nine years in Wyoming on wildlife brucellosis vaccination and research.”); Wyo. Outdoor Council, Chronic Wasting Disease Fact Sheet 1–2 [n.d.], available at http://wyomingoutdoorcouncil.org/html/what_we_do/wildlife/pdfs/ChronicWastingDisease-FactSheet.pdf; see also Womack, supra note 154.

¹⁵⁸ Press Release, U.S. Fish & Wildlife Serv., National Elk Refuge Ends Supplemental Feeding for the Season (Apr. 21, 2008), available at http://www.fws.gov/nationalelkrefuge/Documents/Press%20Releases/04_21_08FeedSeason.pdf (reporting that more than 8.4 million pounds of alfalfa pellets were fed). “It’s hard to comprehend how large and expensive this feeding program has become,” said refuge manager Steve Kallin. Id. Other federal expenditures include personnel salaries and wages, facilities maintenance, etc.

¹⁵⁹ Ira N. Gabrielson, Report to the Wyoming Game And Fish Commission, State of Wyoming 31, 31–32 (Mar. 1952) (copy located in Neal L. Blair papers, American Heritage Center, University of Wyoming), quoted in Leonard R. Carlman, Wildlife-Private Property Damage Law—Once Upon a Time in Wyoming There Was Room for Millions of Cattle and Enough Habitat for Every Species of Game to Find a Luxurious Existence. In the Aftermath of Parker, Can We All Still Get Along? Parker Land and Cattle Company v. Wyoming Game and Fish Commission, 845 P.2d 1040 (Wyo. 1993), 29 Land & Water L. Rev. 89, 94 n.34 (1994). “Special consideration to livestock operators” is not limited to the State of Wyoming, however. In 2000 the National Park Service, U.S. Forest Service, APHIS, and the State of Montana spent about $2.5 million to manage bison on the northern and western borders of Yellowstone National Park to reduce the risk of brucellosis transmission from bison to cattle—a risk that would be far lower but for supplemental feeding. See Kilpatrick et al., supra note 93, at 480–82. According to these researchers:

[T]he National Park Service, the US Forest Service, Animal and Plant Health Inspection Service, and the state of Montana have put into place a plan, the [Interagency Bison Management Plan], that costs ~$2.5 million per year in 2000 to reduce this risk [of brucellosis transmission from bison to cattle]. Unless brucellosis can be eradicated from bison, there is no apparent endpoint for this management plan.
That the State has continued its biologically and economically irrational practice of feeding elk reflects the fact that things have not changed.\textsuperscript{160} As two commentators recently remarked: “Wyoming has never been a state to let science or facts get in the way of culture, custom, and wishful thinking. Our 1880s-era political system is based on a one cow, one vote premise . . . .”\textsuperscript{161}


\textsuperscript{160} The economics of these programs—supplemental elk and bison feeding, which in turn necessitate intensive bison management—are highly questionable. With respect to bison management, a recent study concluded that a far cheaper “management option would be to cease grazing cattle in the areas where bison leave the park in winter and compensate the ranchers for lost earnings and wages.” Kilpatrick et al., \textit{supra} note 93, at 483.

Assuming a value of $875 per head of cattle . . . , the yearly cost for the 1441 cattle grazing on public and private property in the northern and western [special management areas] would be $1,261,362 which is half of the current management costs, and much less than the potential impacts to Montana’s livestock industry, valued at $1.1 billion in 1997, if it loses its brucellosis-free status.

\textit{Id.} The authors state that their “work provides a model framework for quantifying the risk of wildlife–livestock pathogen transmission to guide management actions.” \textit{Id.} at 484. The fact that both programs have “no apparent endpoint” highlights their irrationality. \textit{See id.}; cf. William H. Rodgers, Jr., \textit{Building Theories of Judicial Review in Natural Resources Law}, 53 U. COLO. L. REV. 213, 223–25 (1982) (describing the federal government’s similarly irrational solution to wolf depredation on one farmer’s livestock).

\textsuperscript{161} Taylor & Taylor, \textit{supra} note 85. By 1880, ten years before it became a state, Wyoming boasted 500,000 head of cattle. See Ketcham, \textit{supra} note 55, at 69. The State of Wyoming’s human population did not reach 500,000 until about 125 years later. See U.S. Census Bureau, State and County QuickFacts, http://quickfacts.census.gov/qfd/states/56000.html (last visited Apr. 10, 2010) (reporting an estimated 2008 population of 532,668, and a population in 2000 of 493,782). Ironically, a bison (which had largely been exterminated in Wyoming by 1880) is the prominent feature on the Wyoming state flag. See Welcome to the State of Wyoming, http://www.wyoming.gov/general.aspx (last visited Mar. 26, 2010). Reflecting the importance of the cattle culture, however, the bison is “branded” with the Wyoming state seal. \textit{See id.} (“On the bison, once the monarch of the plains, is the seal representing the custom of branding.”). In fact, the State classifies bison as livestock, not wildlife. \textit{See WYO. STAT. ANN. § 23-1-102(a)(xvi) (2009) (“Bison are considered livestock unless otherwise designated by the Wyoming livestock board and the commission.”); id. § 23-1-101(a)(xiii) (“Wildlife means all wild mammals . . . and wild bison designated by the Wyoming game and fish commission and the Wyoming livestock board within Wyoming.”). The WGFC is authorized to “designate individual bison or identifiable herds of bison as wildlife,” but only “when the action is subsequently approved by the Wyoming livestock board.” \textit{Id.} § 23-1-302(a)(xxvii).
In sum, feedgrounds, like predator control policies, reflect a long-standing cultural and political bias—a bias that continues to trump science and defy common sense.

IV. CLIMATE CHANGE

Readers might be surprised to learn that thirty years ago Congress was aware of a connection between grazing and climate change. In the Public Rangeland Improvement Act of 1978 Congress declared that “unsatisfactory range conditions on public rangelands . . . may ultimately lead to unpredictable and undesirable long-term local and regional climatic and economic changes.”162 Recent studies have greatly extended our understanding of the role of livestock in environmental problems, including climate change. A major study by the United Nations Food and Agriculture Organization (FAO) concluded that livestock production is “one of the top two or three most significant contributors to the most serious environmental problems, at every scale from to local to global,” and it is a “major stressor on many ecosystems and the planet as a whole.”163 Livestock production accounts for nearly twenty percent of global greenhouse gas (GHG) emissions—more than the transportation sector.164 It is a major source of methane and nitrous oxide,165 which are 23 and 296 times, respectively, more potent warm-

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163 FAO, supra note 3, at xx, 267; see also infra note 177 and accompanying text. Speaking of agriculture generally, a World Bank report asserts: “It is the main user of land and water, a major source of greenhouse gas emissions, and the main cause of conversion of natural ecosystems and loss of biodiversity.” WORLD BANK, WORLD DEVELOPMENT REPORT 2008: AGRICULTURE FOR DEVELOPMENT 199 (2007); see also C.A. McAlpine et al., Increasing World Consumption of Beef as a Driver of Regional and Global Change: A Call for Policy Action Based on Evidence from Queensland (Australia), Colombia and Brazil, 19 GLOBAL ENVTL. CHANGE 21, 22 (2009) (highlighting “the contribution of extensive grazing and intensive feedlots as a major driver of regional and global change”); supra notes 7–8.
164 FAO, supra note 3, at xxi (ranking emissions in terms of CO2 equivalents).
165 See Gerber et al., supra note 8, at 245 (reporting that the “livestock commodity chain” contributes “about 9 percent of total anthropogenic carbon dioxide emissions, but 37 percent of methane and 65 percent of nitrous oxide emissions”); WORKING GROUPS I, II, & III OF THE IPCC, CLIMATE CHANGE 2007: SYNTHESIS REPORT: SUMMARY FOR POLICY-MAKERS 5 (Rajendra K. Pachauri et al., eds., 2007) (“It is very likely that the observed increase in CH4 [methane] concentration is predominantly due to agriculture and fossil fuel use. . . . The increase in N2O [nitrous oxide] concentration is primarily due to agriculture.”); WORLD BANK, supra note 163, at 201 (“Livestock and crops emit CO2, methane, nitrous oxide, and other gases, making agriculture a major source of GHG emissions. . . . Agriculture contributes about half of the global emissions of two of the most potent non-carbon dioxide greenhouse gases: nitrous oxide and methane.”).
Beef production is of particular concern. The good news here, as Dr. Barry Popkin commented recently: “If we cut by a few ounces a day our red-meat intake, we would have [a] big impact on emissions and environmental degradation.” In fact, because “methane cycles out of the atmosphere in just eight years” (in contrast to carbon dioxide, “which can remain in the air for more than a century”), reducing livestock production would help cool the earth more quickly than would other measures, like driving less or changing our light bulbs.

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166 Pew Ctr. on Global Climate Change, Glossary of Key Terms, http://www.pewclimate.org/global-warming-basics/full_glossary/glossary.php (last visited Mar 26, 2010) (reporting global warming potentials [GWPs] of methane (CH₄) and nitrous oxide (N₂O) of 23 and 296, respectively). GWPs are “[a] system of multipliers devised to enable warming effects of different gases to be compared,” in which carbon dioxide (CO₂) is assigned a value of 1. Id. On December 15, 2009, the U.S. Environmental Protection Agency (EPA) included CH₄ and N₂O among the six GHGs which “together constitute the root cause of human-induced climate change and the resulting impacts on public health and welfare.” U.S. Env’t Prot. Agency, Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496, 66,516 (Dec. 15, 2009) [hereinafter EPA, Endangerment Finding]. According to EPA, CH₄ and CO₂ are the “two most important directly emitted, long-lived greenhouse gases,” and their concentrations in the atmosphere “are well above the natural range of atmospheric concentrations compared to at least the last 650,000 years.” Id. at 66,517. “The global atmospheric concentration of methane has increased by 149 percent since pre-industrial levels (through 2007); and the nitrous oxide concentration has increased 23 percent (through 2007).” Id.

167 See, e.g., FAO, supra note 3, at 61; McAlpine et al., supra note 163, at 22 (“It is important... to recognise the contribution of extensive grazing and intensive feedlots as a major driver of regional and global change. It is also timely to question the role of increasing world consumption of beef as a driver of regional and global environmental change, and to identify appropriate policy responses to reduce these impacts.”); Schiessl & Schwägerl, supra note 7 (reporting that the German consumer group Foodwatch “concludes that the principal approach to making agriculture more climate-friendly would require a drastic reduction in beef production”).

168 Rob Stein, Daily Red Meat Raises Chances of Dying Early, Wash. Post, Mar. 24, 2009, at A1 (Dr. Popkin is a professor of global nutrition at the University of North Carolina.); see also McMichael et al., supra note 8, at 1253 (recommending that global average meat consumption be limited to “not more than 50 g per day coming from red meat from ruminants (i.e., cattle, sheep, goats, and other digastric grazers.”); McAlpine et al., supra note 163, at 21, 29 (recommending, inter alia, that governments “stop subsidising beef production and promoting beef consumption”); Douglas A. Kysar, Law, Environment, and Vision, 97 Nw. U. L. Rev. 675, 722 (2003) (“Each kilogram of red meat requires three thousand liters of water, the equivalent of two liters of gasoline in petrochemicals and other farm inputs, and five kilograms of corn and meal that otherwise could be used to feed humans.”).

Grazing on public lands is a small contributor to beef production and thus to the sector’s total GHG emissions.\textsuperscript{170} But eliminating public-land grazing would promote ecosystem restoration over several hundred million acres, which in turn would both (1) \textit{mitigate} climate change by enhancing carbon sequestration in soils and plant matter and reducing erosion, and (2) promote \textit{adaptation} to climate-related changes that are inevitable.\textsuperscript{171} Experts tell us that “immediate and major acceleration of efforts” on both mitigation and adaptation will be needed to prevent “climate change from becoming a catastrophe.”\textsuperscript{172}

Adaptation is defined as “actions by individuals or systems to avoid [or] withstand . . . current and projected climate changes and impacts. Adaptation decreases a system’s vulnerability, or increases its resilience to impacts.”\textsuperscript{173} Ecosystem restoration is a prime adaptation strategy, as

\textsuperscript{170} See FAO, \textit{supra} note 3, at 261; see also Donahue, \textit{supra} note 17, at 250–63. But the FAO concluded that intensification of livestock production (and less reliance on extensive grazing) would reduce overall environmental impacts, including GHG emissions. See FAO, \textit{supra} note 3, at 261, 280–81 (recommending that “extensive grazing” should be “reorient[ed] towards provision of environmental services”); see also Schiessl & Schwägerl, \textit{supra} note 7 (reporting that “grass-fed beef” production causes 1.6 times the amount of GHG emissions resulting from “more intensive [beef] production methods”); Donahue, \textit{supra} note 10, at 106 (pointing out that grazing animals emit more CH\textsubscript{4} than do feedlot cattle, and that extensive grazing produces less beef per acre, thus rendering their potential impact on climate disproportionate to their numbers); \textit{infra} text at note 171. Moreover, eliminating public-land grazing is quite likely to reduce grazing use on associated private-land base properties, which would expand the benefits noted in the text. See Donahue, \textit{supra} note 10, at 121; cf. \textit{infra} note 177.

\textsuperscript{171} See, e.g., Donahue, \textit{supra} note 10, at 110. Moreover, the EPA reasoned:

[The] unique, global aspects of the climate change problem tend to support consideration of contribution at lower percentage levels of emissions than might otherwise be considered appropriate . . . . In this situation it is quite reasonable to consider emissions from source categories . . . even if their absolute contribution initially may appear to be small.

EPA, Endangerment Finding, \textit{supra} note 166, at 66,538. Politically, ending grazing on federal lands would signal to other countries that the United States is committed to combating climate change, thus encouraging other nations that have been slow to address this source of GHG emissions to increase their efforts.

\textsuperscript{172} See \textit{Confronting Climate Change}, \textit{supra} note 13, at ix.

\textsuperscript{173} Pew Ctr. on Global Climate Change \& Pew Ctr. on the States, Climate Change 101: Adaptation 3 (2009) [hereinafter Climate Change 101]. According to Working Group II of the IPCC, “\textit{Adaptation} is the adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.” \textit{Impacts, Adaptation and Vulnerability}, \textit{supra} note 32, at 6.
healthy, biologically diverse ecosystems are more resilient and thus better able to withstand major change.\textsuperscript{174}

Subsidizing unsustainable and ecologically damaging agricultural practices, such as public-land grazing in the western United States, adds to the pressures on climate-stressed ecosystems.\textsuperscript{175} While the world succeeded in increasing food production and lowering food prices in the twentieth century, these gains were “achieved at growing costs in the form of the degradation of many ecosystem services.”\textsuperscript{176} Around the world, livestock production “has often led to overgrazing and dryland degradation, rangeland fragmentation, loss of wildlife habitat, dust formation, bush encroachment, deforestation, nutrient overload through disposal of manure, and greenhouse gas emissions.”\textsuperscript{177} In its

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\text{[E]cological restoration is likely to lead to large increases in biodiversity and provision of ecosystem services, [thus] offering the potential of a win-win solution in terms of combining biodiversity conservation with socio-economic development objectives. Because ecological restoration can be effective in restoring natural capital, it should be implemented in areas that have undergone environmental degradation.}
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\textsuperscript{174} \textit{See}, \textit{e.g.}, Christensen et al., \textit{supra} note 50, at 672 (“Long-term adaptations of ecosystems to changes in climate and other environmental variables are strongly dependent upon available biological diversity.”); José M. Rey Benayas et al., \textit{Enhancement of Biodiversity and Ecosystem Services by Ecological Restoration: A Meta-Analysis}, 325 \textit{Science} 1121, 1124 (2009). Based on their review of eighty-nine restoration projects, Dr. Benayas and his co-authors concluded that at national, regional, and local scales ecological restoration is beneficial:

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\text{[E]cological restoration is likely to lead to large increases in biodiversity and provision of ecosystem services, [thus] offering the potential of a win-win solution in terms of combining biodiversity conservation with socio-economic development objectives. Because ecological restoration can be effective in restoring natural capital, it should be implemented in areas that have undergone environmental degradation.}
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\textsuperscript{175} \textit{See} Mary O’Brien, \textit{Uneasy Riders: A Citizen, a Cow, and NEPA}, 39 \textit{Envtl. L. Rep. (Envtl. Law Inst.)} 10,632, 10,634 (2009) (“The particular impacts consequent to livestock grazing have ever-growing significance in light of observed and predicted climate change impacts in the Southwest . . . .”). Dr. O’Brien argues that the “Forest Service has a responsibility to initiate a public exploration of alternatives, under NEPA and in light of climate change, to current management of livestock grazing on the national forests of the arid and semi-arid West.” \textit{Id.} at 10,635. Dr. O’Brien is an ecologist and Southern Utah Forests Project Manager at the Grand Canyon Trust. \textit{Id.} at 10,632.

\textsuperscript{176} \textit{Millennium Ecosystem Assessment, Ecosystems and Human Well-Being: Synthesis} 5 (2005).

\textsuperscript{177} \textit{Id.} at 47. Dust formation, via a positive feedback mechanism, is directly relevant to climate change. Deposition of wind-blown dust on snow-covered lands downwind causes the snowpack to melt earlier, thus exacerbating the early runoff that climate change is predicted to cause in parts of the West. \textit{See} Mark Losleben et al., \textit{Red Dust Layer Surface Effects on Snowpack Temperature Gradients, Subalpine Forest, Niwot Ridge, Colorado} (2006), http://culter.colorado.edu/Climate/Mrsclimate/DustEffectsSnowTemperatures_MtnClim2006_copy.pdf (noting that “radiative activation of [a] red dust layer” increased snow surface tem-
landmark 2006 study, the FAO called attention specifically to grazing on federal lands in the United States (and Australia). Noting the “small contribution” that these “marginal lands” make “to overall livestock supply,” FAO advised ending grazing and returning the lands “to their original state” to help meet “growing demands for other uses such as recreation [and] other environmental services.”

Federal land management offers a variety of what the Pew Center on Global Climate Change calls “no regret,” “low regret,” and “win-win” adaptation opportunities:

- **No regret**: “[a]ctions that make sense or are worthwhile regardless of additional or exacerbated impacts from climate change,” such as “protecting/restoring systems that are already vulnerable or of urgent concern for other reasons”; 

- **Low regret**: employing “[m]easures with relatively low costs for which benefits under climate change scenarios are high[,]” such as “incorporating climate change into forestry, water, and other public land management practices and policies”; and

- **Win-win**: taking actions “that provide adaptation benefits while meeting other social, environmental, or economic objectives, including climate change mitigation.”

The underlying theme here is that protecting and helping to restore ecosystems will increase their resilience to climate change, while providing other environmental benefits and promoting other important objectives.

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178 See FAO, supra note 3, at 261 (noting also the “widespread degradation” of these lands); cf. McAlpine, supra note 163, at 21 (recommending that governments “stop subsidising beef production and promoting beef consumption; control future expansion of . . . extensive grazing; protect and restore regrowth forests in grazing lands; and allocate resources to less environmentally damaging alternative land uses”); Gerber et al., supra note 8, at 246 (“[s]uggesting a shift from some of the current negative [extensive] grazing practices to environmental service-oriented grazing”).

179 Climate Change 101, supra note 173, at 6.

180 As I have argued elsewhere: “Whenever possible, policy interventions should be designed to meet multiple environmental and/or social objectives. Reducing livestock production or otherwise reforming production practices could yield win–win outcomes for
Reestablishing ecosystem attributes, such as biodiversity and ecological function, by removing livestock from public lands would qualify as a “low regret” and a “win-win” opportunity. Ending livestock grazing would improve conditions in both upland and riparian plant communities, leading to healthier streams and riparian areas better able to withstand impacts of climate change, such as drought and variable runoff. Riparian and aquatic communities would benefit from the conserved moisture, enhanced food supplies and shelter, reduced erosion, etc. Producing fewer cattle also would avoid the need to divert huge volumes of water to irrigate forage crops in the arid West, which would contribute further to these improvements. Eventually, the ecological integrity of whole watersheds might be reestablished.

Moreover, some scientists and policy experts have emphasized the importance of protecting and restoring ecosystems to insure against natural disasters. Indeed:

GHG control and conservation of water, soil, and biodiversity.” Donahue, supra note 10, at 113; cf. U.S. ENVTL. PROT. AGENCY, EPA 430-R-05-006, GREENHOUSE GAS MITIGATION POTENTIAL IN U.S. FORESTRY AND AGRICULTURE 7-1 (2005) (“Changes in land-use and management practices as a result of GHG mitigation actions can produce non-GHG environmental co-effects,” including benefits to “water quality, air quality, soil quality, and biodiversity.”).

181 See CLIMATE CHANGE 101, supra note 173, at 6; cf. Benayas et al., supra note 174, at 1124.

(E)cological restoration is likely to lead to large increases in biodiversity and provision of ecosystem services, offering the potential of a win-win solution in terms of combining biodiversity conservation with socio-economic development objectives. Because ecological restoration can be effective in restoring natural capital, it should be implemented in areas that have undergone environmental degradation.

Id. (citation omitted).

182 “Excluding cattle from riparian areas is the most effective tool for restoring and maintaining water quality and hydrologic function, vegetative cover and composition, and native species habitats.” NRC REPORT, supra note 14, at 393. But as noted earlier, livestock grazing “also must be managed on uplands to protect riparian areas.” See id.; see also supra note 21 and accompanying text.

183 In Wyoming, for example, 175,000 hectares of alfalfa are irrigated—a “greater hectareage than that of all other irrigated cash crops combined.” D. Claypool et al., GENETIC IMPROVEMENT OF ALFALFA TO CONSERVE WATER, Wyoming Water Conf., Apr. 21–22, 1997, Casper, published in WHAT’S NEW IN THE TOOLBOX: APPLIED RESEARCH FOR MANAGEMENT OF WYOMING’S WATER 214, 214, available at http://library.wrds.uwyo.edu/wrp/97-05/97-05.pdf; see also George Wuerthner, GUZZLING THE WEST’S WATER, NewWest, Oct. 9, 2008, http://www.newest.net/topic/article/guzzling_the_wests_water/C41/L41/ ("In Montana, agriculture takes 97 percent of all water used in the state, and just about the only irrigated crop there is hay and pasture forage; more than 5 million acres in the state are irrigated hay meadows.").
[T]he conservation of nature to reduce vulnerability to disasters may present one of the greatest and most-consistently under-valued natural services provided by biodiversity. The protective value of ecosystems may exceed income from the use of their resources. Ecosystems’ protective services, such as the prevention of erosion, floods, landslides, avalanches, cyclones and other natural and unnatural disasters, deserve far more attention when it comes to assessing their value.184

Thus broadly considered, the benefits—environmental, recreational, safety, and aesthetic—from restoring public land watersheds would eclipse the minor economic costs to livestock producers and some communities.185

Climate change adaptation is not “just another” argument for ending public-land livestock grazing, like one more authority in a “string cite.” Climate change is impacting ecosystems now, and some level of additional impacts is inevitable, regardless of measures taken to reduce GHG emissions.186 Global climate change makes the need for “ecological recovery of herbivore-impacted ecosystems . . . even more urgent.”187


185 See THOMAS MICHAEL POWER, LOST LANDSCAPES AND FAILED ECONOMIES: THE SEARCH FOR A VALUE OF PLACE 182–85 (1996); Debra L. Donahue, Western Grazing: The Capture of Grass, Ground, and Government, 35 ENVTL. L. 721, 800–01 (2005) (discussing real and purported costs of ending public-land grazing to western communities). See generally Thomas M. Power, Taking Stock of Public Lands Grazing: An Economic Analysis, in Welfare Ranching, supra note 25, at 263. For present purposes, it is also worth noting that ending grazing on public lands could reduce if not obviate the “need” for supplemental feeding of elk, which would yield significant cost savings. See supra notes 132–58 and accompanying text; see also KARYN MOSKOWITZ & CHUCK ROMANIELLO, ASSESSING THE FULL COST OF THE FEDERAL GRAZING PROGRAM 1 (2002) (estimating that the “full cost of the federal grazing program to the U.S. Treasury is likely to approximate $500 million annually,” and that the “full cost to the U.S. public,” considering “the many other indirect costs borne by state and local government agencies, individuals and private institutions . . . could approach $1 billion annually”).


187 Beschta & Ripple, Large Predators, supra note 35, at 12 (“There is an increasing awareness in other parts of the world that existing large carnivores may be necessary for
While we might not be able to fend off irreversible ecosystem “tipping points,” we must not make them more likely. 188 To borrow a line from the United Nations Foundation, our strategy, as well as our goal, should be to “avoid[] the unmanageable and manage the unavoidable.”189 By taking steps to alleviate manageable environmental stressors, such as livestock production, we can reduce and better cope with the impacts of climate change.

V. Current Law and Analysis

The prior parts of this Article have outlined three land-use and environmental problems that share a common cause—livestock production. None of them will be resolved if livestock’s causal role continues to be ignored. On the other hand, each of them could be alleviated, in some cases substantially, by changes in livestock production practices. Specifically, I have advocated an end to livestock grazing on the public’s land in the American West.

This Article elaborates on three specific reasons why we should do that:

1. to enable broader reintroduction of top predators so as to foster restoration of communities and ecosystems, which have been disrupted and transformed by excess herbivory and the ensuing cascade of effects; 190
2. to obviate the perceived need to feed elk and thus halt the environmental damage feedgrounds are causing and, hopefully, forestall the spread of serious diseases; 191 and
3. to mitigate climate change and promote regional adaptation to its effects. 192

Note that, in each case, solving the problem involves restoring ecosystems, an objective that ending livestock grazing or reforming production practices would promote. 193

It is neither feasible nor necessary to undertake a thorough exploration of the relevant law. I have argued at length elsewhere that exist-

188 See Donahue, supra note 17, at 146–52, 159–60 (discussing thresholds).
189 See Confronting Climate Change, supra note 13 (referencing the report title).
190 See supra Part II.
191 See supra Part III.
192 See supra Part IV.
193 See supra Parts II–IV.
ing law supports removing livestock from public lands. The U.S. Government Accountability Office’s recent conclusion that the federal land agencies have ample authority to adjust their management to respond to climate change is consistent with the power to alter grazing practices or terminate grazing. This Part will focus on legal arguments specific to feedgrounds and predators.

Despite agency assertions to the contrary, the legal arguments against maintaining feedgrounds on public lands are strong. Officials of the Bridger-Teton National Forest claimed in an environmental document that Wyoming’s “jurisdiction over state wildlife” deprives the

194 See Donahue, supra note 17, at ch. 7. See generally Donahue, supra note 10; Donahue, supra note 3. The Federal Land Policy and Management Act (FLPMA) explicitly authorizes “elimination” of previously allowed uses, like livestock grazing over large areas. See 43 U.S.C. § 1712(e) (2006). In fact, a strong argument can be made that in many situations the law requires that livestock be removed. See Donahue, supra note 17, at ch. 7. While *The Western Range Revisited* focused on lands managed by the Bureau of Land Management (BLM), much of its reasoning and many of the same laws apply to national forest land management as well. FLPMA governs grazing on BLM lands and national forests. See 43 U.S.C §§ 1751–1753. Environmental laws, including the Clean Water Act and Endangered Species Act, apply equally to both agencies. See 33 U.S.C. § 1323(a) (2006); 16 U.S.C. § 1536(a)(2) (2006).

195 See GAO, supra note 186, at 44 (concluding that the BLM, Forest Service, Fish and Wildlife Service, National Oceanic and Atmospheric Administration, and National Park Service “are generally authorized, but not specifically required, to address changes in resource conditions resulting from climate change in either their resource management actions or planning efforts”). According to a secretarial order issued in 2009, the Department of the Interior is “taking the lead in protecting our country’s water, land, fish and wildlife, and cultural heritage and tribal lands and resources from the dramatic effects of climate change that are already occurring.” Sec’y of the Interior, U.S. Dep’t of the Interior, SO#3289A1 2/22/10, Order No. 3298, Amendment No. 1: Addressing the Impacts of Climate Change on America’s Water, Land, and Other Natural and Cultural Resources § 1 (2010), available at http://206.131.241.18/elips/SO_word/so3289A1.doc. The Order declares that, “for the first time ever,” the Department “is now managing America’s public lands . . . to promote environmentally responsible renewable energy development.” Id. The Order established a Climate Change Response Council, which is tasked with coordinating climate change activities of Interior agencies and other federal departments and agencies, and with “implement[ing] an integrated strategy for responding to . . . climate change impacts” to Interior resources. Id. § 3. The Council is charged with working with “a network of collaborative ‘Landscape Conservation Cooperatives’” to “develop landscape-level strategies for understanding and responding to climate change impacts.” Id. § 3(c).

Forest Service of any authority to regulate elk feeding. Even if feeding were disallowed in national forests, the document continued, the State would just establish feedgrounds elsewhere. This stance cannot be squared with the Forest Service’s broad powers. First, its multiple-use mandate, like the Bureau of Land Management’s, explicitly encompasses wildlife; it is not limited to wildlife habitat. Indeed, the Federal

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198 See Long Term Special Use Authorization, supra note 103, at 4 (“The effects analysis for this alternative [No Action—No Special Use Authorization] projects that elk winter management activities would continue to be performed by [Wyoming Game and Fish Commission (WGFC)] on other federal, state, or private lands.”); id. at 8 (“The potential effect of CWD on elk populations is similar for all alternatives in this analysis because the WGFC will continue to feed elk on Federal lands or other locations on State or private lands as near to the current site(s) as possible.”); id. at 6 (table summarizing effects by alternative, showing basically identical effects on wildlife species and on disease transmission). (About a third of existing state feedgrounds are on private or other federal lands.) This syllogism allowed the Forest Service to shrug off as “unavoidable” all adverse environmental effects of feedgrounds. See U.S. Forest Serv., U.S. Dep’t of Agric., Final Environmental Impact Statement: Long Term Special Use Authorization for Wyoming Game and Fish Commission to Use National Forest System Land for Their Winter Elk Management Activities 97–98 (2008). These included impacts to soils, vegetation, wildlife, water quality, and riparian areas, and increased probability of disease and parasite transmission among elk. Id. at 98. Forest Supervisor, Carole “Kniffy” Hamilton acknowledged these impacts in her Record of Decision and identified the “No Special Use Authorization” alternative as the environmentally preferred alternative. U.S. Forest Service, U.S. Dep’t of Agric., Record of Decision: Long Term Special Use Authorization for Wyoming Game and Fish Commission to Use National Forest System Land for Their Winter Elk Management Activities 10, 8–9 (2008). In choosing to reauthorize the feedgrounds she wrote: “It is the responsibility of the WGFC to manage wildlife populations, including studying and managing the potential for disease transmission and determining acceptable levels of disease prevalence and risk.” Id. at 8. Thus:

The decision whether or not to feed elk in the winter is a Wyoming Game and Fish Commission decision. I have the discretion to authorize or not authorize the use of NFS lands for this purpose. . . . I decided that continuing to authorize use of NFS land for feedgrounds while encouraging and supporting WGFC in exploration of alternative ways to manage elk populations in northwest Wyoming is the prudent course of action. Any alternatives to winter feeding such as development or improvement of winter range would take many years to accomplish, and would not eliminate the need for supplemental elk feeding in the short-term.

Land Policy and Management Act of 1976 (FLPMA) authorizes each agency to regulate or close areas to hunting “for reasons of public safety, administration, or compliance with . . . applicable law.” Having authorized this infringement on a traditional state prerogative, Congress surely contemplated that the agencies could exercise less intrusive powers respecting wildlife—for instance, to forbid supplemental feeding—where federal interests are implicated.

Even before passage of FLPMA, the U.S. Supreme Court announced that federal power over the public lands under the Property Clause “necessarily includes the power to regulate and protect the wildlife living there,” and that exercise of this power by Congress “overrides conflicting state laws.” Nor is the Forest Service helpless to prevent the State from feeding on nonfederal lands, if that activity threatens uses or interests in adjacent national forests.

Feedgrounds arguably contravene the Forest Service’s governing laws and special-use permitting regulations in several ways. For example: Feedgrounds are not a “public” or a “national” use or activity. As
we have seen, the chief motivation for feeding is to protect private property (secondarily, it helps satisfy hunter demands for more tags and longer seasons).

The unavoidable results include damage to soils, water, and vegetation and higher disease rates and risks among elk, moose, and deer—all public resources. Nor are feedgrounds a “suitable” use of national forests. They “impair[] the productivity of the land”; they arguably “preclude the general public from full enjoyment of the natural, scenic, recreational, and other aspects of the national forests”; and they cause rather than “[m]inimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment.” Moreover, they are likely to cause permanent soil contamination—a feature that surely violates the thirty-year term limit on special uses, the requirement that uses be revocable, and the prohibition against disposing solid waste or hazardous substances.

The U.S. Fish and Wildlife Service (USFWS or the Service) is arguably on even shakier legal ground with respect to supplemental feeding. The Service has a mandate to conserve and, where appropriate, restore national wildlife refuges.\textsuperscript{215} “Conserve” is defined as “to sustain and, where appropriate, restore and enhance, healthy populations of fish, wildlife, and plants utilizing . . . methods and procedures associated with modern scientific resource programs.”\textsuperscript{216} Congress has further directed the agency to maintain the “biological integrity, diversity, and environmental health of the [National Wildlife Refuge] System . . . for the benefit of present and future generations of Americans.”\textsuperscript{217} Supplemental feeding on the National Elk Refuge (NER) violates these mandates in several obvious ways, for instance, by maintaining elk populations at levels unsupportable by their habitat, degrading riparian plant and animal communities, and defying the scientific consensus that crowding exacerbates disease risks.\textsuperscript{218} Indeed, NER personnel publicly stated that “USFWS policy . . . requires that wildlife densities do not reach excessive levels that would result in adverse effects on habitat and other wildlife species, including increased disease risks.”\textsuperscript{219} Moreover, because supplemental feeding “materially interfere[s] with” fulfillment of the National Wildlife Refuge System’s conservation and restoration


\textsuperscript{216} Id. § 668ee(4).

\textsuperscript{217} Id. § 668dd(a)(4)(B). Smith et al.’s \textit{Imperfect Pasture} was written, in part, “to fulfill [legal and policy] requirements” for developing habitat management plans for national wildlife refuges. See Smith et al., supra note 38, at 1 (citing requirements to develop plans that identify species and communities of concern, based on changes from historically natural conditions and ecological processes, and which discuss “optimal management . . . to maintain and restore biological integrity, diversity, and environmental health, including a rationale for resolving conflicting habitat needs among resources of concern”).

\textsuperscript{218} See supra notes 98–99, 111–16, 122, 124–27 and accompanying text.

\textsuperscript{219} See Bison and Elk Plan, supra note 99, at vii.
mission, as well as “the purposes of the refuge,” it plainly is not a “compatible use” of the NER.

The Service’s winter feeding policy is influenced in part by a “desire to not markedly impact the Wyoming Game and Fish Department’s [(WGFD)] ability to annually meet their Jackson elk herd objective.” But a federal court has ruled unequivocally that federal authority over wildlife on the NER is paramount to that of the State. And the Ser-

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220 The Act establishing the NER provides:

There is established a winter game (elk) reserve in the State of Wyoming, which shall be located . . . south of the Yellowstone Park, and shall include not less than two thousand acres . . . , and the Secretary of the Interior is authorized to purchase said lands with improvements, to erect necessary buildings and inclosures, and to incur other expenses necessary for the maintenance of the reserve . . . .

16 U.S.C. § 673. A former senior biologist at the NER asserts that feeding is inconsistent with this purpose, noting that the Act “makes no mention of feeding elk.” See Smith et al. supra note 38, at 18 (citing An Act Making Appropriation for the Department of Agriculture for Fiscal Year Ending June Thirtieth, Nineteen Hundred and Thirteen, Pub. Law No. 62-621, 37 Stat. 269, 293 (1912)). Rather, “[b]y default, feeding elk became policy out of repeated practice.” Id. A subsequent statute in 1927, accepting a gift of lands from the Izaak Walton League, to become part of an expanded refuge, set forth “conditions,” namely:

that [the lands] be used and administered by the United States, under the supervision and control of the Secretary of the Interior, for the grazing of, and as a refuge for, American elk and other big game animals, and that . . . [the lands] shall become a part of the winter elk refuge established under section 673 of this title, and shall be subject to any laws governing the administration and protection of said refuge.


222 See Bison and Elk Plan, supra note 99, at 10.

223 See Wyoming v. United States, 279 F.3d 1214, 1227–28 (10th Cir. 2002). The court ruled that the NWRsIA “plainly vest[s] the FWS with authority to administer the Act and manage the [National Wildlife Refuge System].” Id. at 1228. The court also noted that the “Tenth Amendment does not reserve to the State of Wyoming the right to manage wildlife, or more specifically vaccinate elk, on the NER, regardless of the circumstances.” Id. at 1227. Furthermore: “The Secretary [of the Interior] alone is authorized, ‘under such regulations as he may prescribe,’ to ‘permit the use of any area within the System for any purpose . . . whenever he determines that such uses are compatible with the major purposes for which such areas were established.’” Id. at 1234 (quoting 16 U.S.C. § 668dd(d) (1) (A)).
vice itself has acknowledged that it has the legal authority to break with state policies regarding feeding and disease management.\footnote{See Bison and Elk Plan, supra note 99, at xii (“Plans to follow the state CWD management plan have been made in deference to the state and could change if the National Park Service and/or the U.S. Fish and Wildlife Service adopted service-wide management requirements that differed from what is currently being done.”).}

Feedgrounds are objectionable under state law as well. Water and wildlife are public resources, which states hold in trust for their citizens and therefore are obligated to protect.\footnote{See, e.g., Kleppe v. New Mexico, 426 U.S. 529, 545 (1976) (“Unquestionably the States have broad trustee and police powers over wild animals within their jurisdictions.”); cf. Baldwin v. Fish & Game Comm’n, 436 U.S. 371, 388 (1978) (“The elk supply, which has been entrusted to the care of the State by the people of Montana, is finite and must be carefully tended in order to be preserved.”). Chief Justice Burger filed a concurring opinion in Baldwin, wherein he referred to the state’s “special interest in regulating and preserving wildlife for the benefit of its citizens” 436 U.S. at 392 (Burger, C.J., concurring). As attorneys Musiker et al. explained in their article on the public trust doctrine:}

The state, as trustee, must prevent substantial impairment of the wildlife resource so as to preserve it for the beneficiaries—current and future generations. . . . [T]he state must \textit{inter alia}: (1) consider the potential adverse impacts of any proposed activity over which it has administrative authority; (2) allow only activities that do not substantially impair the state’s wildlife resources; [and] (3) continually monitor the impacts of an approved activity on the wildlife to ensure preservation of the corpus of the trust . . . .


\begin{itemize}
  \item [A] workable model for effectuating the public trust in wildlife must, at a minimum, include the fundamental elements of any trust relationship, as currently recognized in Anglo-American law. For wildlife and other resource managers, these translate into the following:
  \begin{itemize}
    \item 1) The designation of identifiable trustees;
    \item 2) The de-politicization of the process and assured independence of trustee action;
    \item 3) High-visibility decision-making;
    \item 4) A clearly articulated right by the beneficiaries of the trust to challenge those actions that fail to meet trust standards;
    \item 5) An elevation of the standard of care by which the trustees’ actions are judged;
    \item 6) Ascertainable and, where possible, objective standards for decision-making; and
    \item 7) New ways of thinking about the funding of wildlife management agencies.
  \end{itemize}
\end{itemize}
Supreme Court, elk have “been entrusted to the care of the State by the people . . . and must be carefully tended in order to be preserved.”  The State’s “duty to preserve, protect, and nurture the wild game” led the Wyoming high court to strike down a statute, which it determined had caused overhunting and “serious depletion of deer.” By the same token, these trust duties would support—if not compel—a state decision to end supplemental feeding, which promotes the spread of chronic wasting disease, a malady fatal to elk and other cervids.

State law does authorize the Wyoming Game and Fish Commission (WGFC) to “make suitable provisions for the feeding of the game animals, birds, and fish of Wyoming in such localities as may be deemed necessary.” But this begs the question of what is either “suitable” or “necessary.” Can a practice, which the agency itself concedes increases the prevalence of diseases and parasites in elk, seriously be defended as a measure designed to “preserve, protect, and nurture” elk populations? Does making elk dependent on artificial feeding keep them “wild”? Can feeding certain elk populations every winter for sixty years be justified as “necessary”?

The State’s report on feedgrounds leaves no doubt that the fundamental purpose of feeding is not to protect elk but primarily to safe-

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227 Schakel v. State, 513 P.2d 412, 415 (Wyo. 1973) (ruling that the State must employ means that are “reasonable and . . . appropriate for the accomplishment of [its] duty to protect and nurture the game”).

228 WYO. STAT. ANN. § 23-1-302(a)(ix) (2009). The statute also authorizes the Commission to “open game preserves for hunting when they are overstocked or a serious shortage of feed exists. These preserves shall be so managed that they do not cause overstocking or other damage to the surrounding area.” Id. § 23-1-302(a)(xviii). It’s noteworthy that (1) this provision does not authorize feeding as a remedy for a “serious shortage of feed,” and (2) it warns against overstocking—which, as the feedgrounds demonstrate, is a side effect of feeding. See id.

229 See supra notes 119, 132 and accompanying text.

230 Elk quickly become dependent on feeding by humans and are tamed relatively easily. Elk on feedgrounds are treated like domestic livestock. They are in close daily contact with humans who use motorized vehicles to feed them. On some feedgrounds they are vaccinated against brucellosis, a livestock disease, by being shot with “biobullets” fired from an air-powered rifle. WYO. GAME & FISH DEP’T, supra note 91, at 15–16, 18.
guard private ranching interests. In fact, feeding is just one of a “variety of [WGFD] techniques designed to keep elk and cattle separated” for the benefit of stock and stock owners; others include providing ranchers with materials to enclose hay stack yards, hazing elk, and “lethal take of elk.” Moreover, the amount spent on these management activities—funded almost exclusively by hunting and fishing license fees—has “show[n] a dramatic increase . . . over the past 20 years.”

The Department has no legislative mandate to protect livestock from diseases found in wildlife—the mainstay of the Department’s argument that feedgrounds are necessary.

The NER feedground and the state feedgrounds on national forests have been targets of litigation, but no court has yet reached the legal

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231 See generally supra notes 101–03, 138–39, 149–50 and accompanying text.
232 Wyo. Game & Fish Dep’t, supra note 91, at 18. WGFD spends, on average, $26,752 per year [on game warden salaries] addressing elk damage. There are additional costs for equipment such as trucks, snowmobiles, and aircraft charter. The Game and Fish Department has spent between $1,000 and $10,000 in most years using helicopters to haze elk. Annual snowmobile operation costs routinely exceed $10,000.” Id. How does shooting elk (to prevent severe damage to livestock operations) “preserve, protect, and nurture” them? See supra text at note 227.
233 Wyo. Game & Fish Dep’t, supra note 91, at 18.
234 See generally supra discussion at notes 101–03, 119, 149–50. The Wyoming Supreme Court rejected a livestock producer’s argument that Wyo. Stat. Ann. § 23-1-901 (2009), by which the State assumes some liability for damage caused by big game to livestock and private land, also requires compensation for livestock losses allegedly attributable to wildlife-carried disease. See Parker Land & Cattle Co. v. Wyo. Game & Fish Comm’n, 845 P.2d 1040, 1041 (Wyo. 1993); cf. Baldwin v. Fish & Game Comm’n, 436 U.S. 371, 376 n.12 (1978) (“[A] property owner in [Montana] must recognize the fact that there may be some injury to property or inconvenience from wild game for which there is no recourse” (quoting State v. Rathbone, 100 P.2d 86, 93 (Mont. 1940)).
235 Several groups, including the Greater Yellowstone Coalition (GYC), sued the U.S. Forest Service and BLM in 2006 over feedgrounds on Bridger-Teton National Forest (BTNF) and BLM lands, raising procedural challenges, including that the agencies had violated the National Environmental Policy Act (NEPA) by not analyzing the environmental effects of their decisions to authorize or reauthorize feedgrounds. The Tenth Circuit Court of Appeals dismissed as moot the NEPA claims relating to six feedgrounds, which the BTNF had evaluated in an environmental impact statement (EIS) prepared after suit was brought. See Greater Yellowstone Coal. v. Tidwell, 572 F.3d 1115, 1128 (10th Cir. 2009) (referring to BTNF July 2008). The court affirmed the decision of the U.S. District Court in Wyoming on the remaining claims, i.e., that (1) GYC lacked standing to raise a NEPA challenge to unpermitted BTNF feedgrounds and there was no final agency action under the Administrative Procedure Act (APA); (2) GYC lacked standing on its permitting claim regarding the test-and-slaughter program, and its NEPA claim failed because authorization of the facilities was not a major federal action; and (3) “BLM adequately authorized the [BLM] feedgrounds pursuant to [a 1981 Memorandum of Understanding]” and thus, effectively GYC lacked standing. See id. at 1120; see also Associated Press, Foes of Elk Feed Sites Lose Court Decision, BILLINGS GAZETTE, July 10, 2009, http://www.billingsgazette.com/news/state-and-regional/wyoming/article_455de1dc-6dce-11de-b9e3-001cc4e03286.html (“Three of the eight feedgrounds [on national
merits of feeding. When a court does reach the merits in a challenge to the feedgrounds, it should rule that supplemental feeding policies, if not actually ultra vires, are arbitrary and capricious, and thus unlawful. None of the agencies involved has “articulate[d] a satisfactory explanation for its action including a ‘rational connection between the facts found and the choice made.’” In deferring to private ranching interests, the agencies have relied on factors that the legislatures did not intend them to consider. The decision to continue or allow feeding “runs counter to the evidence” concerning disease risks and “is so implausible that it could not be ... the product of agency expertise.”

If the laws governing public lands and resources were applied honestly and sensibly, our management prescriptions would change. We would manage BLM lands and national forests sustainably, in the national interest, to prevent impairment of their productivity. Giving due regard to the relative value and scarcity of resources, we would accord priority to protecting riparian areas and other native communities and species, recognizing that they “cannot be duplicated elsewhere.”

forest land] had never been subjected to environmental analysis, and the most recent analysis for the other five occurred in 1981.”). In separate litigation, the Defenders of Wildlife and other groups challenged feeding on the NER, raising procedural and substantive claims under the APA and NWRI. See Memorandum in Support of Plaintiffs’ Motion for Summary Judgment, Defenders of Wildlife v. Salazar, No. 08-cv-00945-RJL (D.D.C. Feb. 18, 2009). To date, no legal challenge has been brought against the State of Wyoming. Thus, the possibility of bringing claims against the Forest Service or the State of Wyoming based on the merits of feeding remains open.

238 See id.
240 See, e.g., 43 U.S.C. § 1702(c); 16 U.S.C. § 529. In 16 U.S.C. § 1531, Congress stated its finding that “encouraging the States and other interested parties ... to develop and maintain conservation programs which meet national and international standards is a key to meeting the Nation’s international commitments and to better safeguarding, for the benefit of all citizens, the Nation’s heritage in fish, wildlife, and plants.” 16 U.S.C. § 1531(a)(5) (emphasis added).
241 See 43 U.S.C. §§ 1701(a)(11), 1711(a), 1712(c)(3); supra notes 14, 24–27 and accompanying text (discussing the importance of riparian areas). For example, “[r]iparian zones can contain nearly all the small mammal species in neighboring habitats, but the reverse is not true.” SMITH ET AL., supra note 38, at 131.
242 See SMITH ET AL., supra note 38, at 130 (quoting Chester Anderson who, in describing the economic importance of the wildlife habitat in the Jackson Hole area, wrote: “This habitat cannot be duplicated elsewhere. Its loss would detrimentally affect the entire state.”). It is widely recognized that Wyoming’s wildlife is a principal drawing card for tourists who visit the state. See, e.g., id. at 16 (reporting that “elk were instrumental in support-
We would close the NER feedground to protect and restore the refuge’s ecological integrity, diversity, and health, and the state feedgrounds because they violate the public trust in wildlife and basic principles of multiple use and sustained yield. We would reestablish predators, as that holds promise for restoring crucial habitats, promoting watershed health, and enabling us to cope with climate change. We would end public land grazing because using these lands to grow a commodity that can be produced anywhere is plainly not “the most judicious use.”

Public land grazing is on the wane—for a host of reasons, including declining profitability, a shrinking pool of ranchers, inadequate water supplies, species listings under the Endangered Species Act, and litigation. Why not just let it “die out naturally”? Or why not phase it

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245 See, e.g., 16 U.S.C. §§ 528, 531(a), 1601(d)(1), 1604(c)(1), 1607; 43 U.S.C. §§ 1702(c), (h), 1712(c)(1); cf. Christensen et al. supra note 50, at 682 (“[M]anagement that focuses on commodity resources alone, that does not acknowledge the importance of diversity and complexity, that is not aware of influences of and impacts on surrounding areas, and that concerns itself with short time frames, is not likely to be sustainable in the long term.”); id. (“[S]ustainability must be the primary objective [of strategies to provide ecosystem goods and services], and levels of commodity and amenity provision [must be] adjusted to meet that goal.”); id. at 673 (“[O]verexploitation of resources resulting in diminished diversity often has both ecological and economic long-term opportunity costs that far exceed the short-term benefits.”); id. (“Given ever-changing environments, the capacity to adapt is central to the long-term sustainability of ecosystem function.”).
246 See supra Parts III–IV.
247 See 43 U.S.C. § 1712(c)(6) (directing the Secretary of the Interior to consider, when developing land use plans, “the relative scarcity of the values involved and the availability of alternative means . . . and sites for realization of those values”).
248 This is a criterion for “multiple use,” found in both the Forest Service and the BLM definitions of the term. See 16 U.S.C. § 531; 43 U.S.C. § 1702.
249 See Leshy & McUsic, supra note 12, at 369–70, 376.
out legislatively—for instance, by permanently withdrawing lands from grazing when a willing permittee irrevocably relinquishes her permit?\textsuperscript{250} \textit{Because},

- range degradation continues,
- agencies are unwilling or unable to enforce their standards (and the standards are indisputably inadequate),\textsuperscript{251} and
- “\textit{entire ecosystems} are on the line”—at a threshold or tipping point, at risk of being “permanently transformed.”\textsuperscript{252}

Scholars and commentators report this risk matter-of-factly—without, apparently, appreciating what it means to “permanently transform” an ecosystem.\textsuperscript{253} It means that species will be extinguished and communities will unravel and possibly disappear over millions of acres; it means that genetic potential will be lost forever, hydrologic cycles and water supplies will be irreparably altered, and other indispensable ecosystem services will be forfeited.\textsuperscript{254} It means watching many of our cherished “pleasuring grounds” disappear,\textsuperscript{255} jeopardizing our ability to feed ourselves, and condemning ourselves to a future of inexorably shrinking options.

However capacious the discretion of public-land managers, surely the law does not condone these choices.

\textbf{Conclusion}

In closing, let us return to riparian areas. Those thin green cords that lace our landscapes also tie together the wide-ranging topics touched on here.

In his lyrical \textit{Song of the Gavilan}, Aldo Leopold wrote:

\begin{footnotes}
\item[250] See id. at 388–97 (proposing a voluntary surrender and legislatively mandated retirement solution).
\item[251] See supra discussion at note 22 (regarding condition of public rangelands).
\item[252] See Leshy & McUsic, supra note 12, at 372–73. As I explained in \textit{The Western Range Revisited}, Congress recognized grazing’s causal role in transforming ecosystems when it passed the Taylor Grazing Act and, starting about 1990, range ecologists explained the phenomenon and documented ecosystem shifts that had \textit{already} occurred and conditions signaling other imminent transformations. See Donahue, supra note 17, at 34–35, 146–51, 179, 198, 316 n.96. Still, for the most part, BLM and the Forest Service continue to ignore the science concerning thresholds. See Donahue, supra note 3, at 305.
\item[253] See, e.g., Leshy & McUsic, supra note 12, at 373 (illustrating scholars’ matter of fact statements about permanent ecosystem transformation).
\item[254] See id.
\end{footnotes}
The life of every river sings its own song, but in most the song is long since marred by the discords of misuse. Overgrazing first mars the plants and then the soil. Rifle, trap, and poison next deplete the larger birds and mammals; then comes a park or forest with roads and tourists. Parks are made to bring the music to the many, but by the time many are attuned to hear it there is little left but noise.\textsuperscript{256}

Watercourses and their riparian areas are the most valuable habitats in the Interior West.\textsuperscript{257} They are also among the most degraded.\textsuperscript{258} Experience suggests only two affordable\textsuperscript{259} and sustainable ways to rehabilitate damaged riparian areas at landscape scales—removing livestock and reestablishing top predators.\textsuperscript{260} Removing livestock from public lands would improve watershed conditions and make the return of predators politically feasible.\textsuperscript{261} Removing livestock also would facilitate closing elk feedgrounds.\textsuperscript{262} Closing the feedgrounds would slow the spread of disease, avoid long-term soil contamination, and directly improve conditions on several thousand acres now treated as sacrifice areas.\textsuperscript{263} Collectively, these measures—removing livestock, returning predators, and closing feedgrounds—would enhance prospects for coping with climate change.\textsuperscript{264}

A landscape, Leopold suggested, is “the owner’s portrait of himself.”\textsuperscript{265} Among western farmers and ranchers of the 1930s he found

\begin{enumerate}
\item\textsuperscript{256} Leopold, supra note 51, at 149–50.
\item\textsuperscript{257} See supra notes 24–27, 232 and accompanying text.
\item\textsuperscript{258} See supra notes 27–31 and accompanying text.
\item\textsuperscript{259} See E.S. Bernhardt et al., Synthesizing U.S. River Restoration Efforts, 308 Science 636–37 (2005) (reporting costs for various restoration goals; the median cost of $15,000 for livestock exclusion for riparian management was less, sometimes dramatically less, than for any other “common restoration activities”).
\item\textsuperscript{260} Interview with Dr. Robert L. Beschta, Emeritus Professor of Watershed Processes & Hydrology, Or. State Univ., in Corvallis, Or. (Oct. 5, 2009); cf Donahue, supra note 17, at 286 (“[E]limination of grazing lands holds greater potential for benefiting biodiversity than any other single land use measure.”); Benayas et al., supra note 174, at 1122 (reporting that thirteen of the restoration assessments examined involved “passive restoration,” that is “cessation of degrading action [such as overgrazing] only”). Noting that restoration is costly and “does not necessarily achieve the values of biodiversity or ecosystem services found in intact ecosystems,” Benayas and his co-authors stressed “the primary need to conserve wild nature and avoid environmental degradation wherever possible.” Id. at 1124.
\item\textsuperscript{261} See supra notes 18–21, 58, 84 and accompanying text.
\item\textsuperscript{262} See supra notes 134, 136–38, 149–50, 231–32 and accompanying text.
\item\textsuperscript{263} See supra notes 131–33, 191 and accompanying text.
\item\textsuperscript{264} See supra notes 52, 58–59, 92, 169, 171, 178, 181–83 and accompanying text.
\item\textsuperscript{265} Newton, supra note 50, at 261 (quoting and citing Leopold, The Farmer as a Conservationist).
\end{enumerate}
“no sense of pride in the husbandry of wild plants and animals, no sense of shame in the proprietorship of a sick landscape.”

National forest and Bureau of Land Management rangelands paint a similarly unflattering picture of their owners: at best, ignorant; at worst, greedy, short-sighted, and insensitive to the needs of what Leopold referred to as the “land community.”

Leopold’s land ethic was inspired by the need to “protect the public interest in private land.” It “provided the ecological base for a new understanding of private landownership, giving content to the individual’s duty, as [Leopold] put it, ‘to manage his land in the interest of the community, as well as in his own interest.’” In the public lands arena, the relevant community is the nation. “[S]o long as the lands are owned by the whole nation,” professor and former interior solicitor John Leshy wrote recently, “the ultimate test is what best serves the national interest.” Whether on public lands or on private, the relevant and essential standard is land health, a concept that Leopold summarized as “the capacity of the land for self-renewal.”

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266 Leopold, supra note 51, at 158. Leopold continued: “We tilt windmills in behalf of conservation in convention halls and editorial offices, but on the back forty we disclaim even owning a lance.” Id.

267 See Newton, supra note 50, at 269–73.

268 See id. at 349–50 (“[Leopold’s land ethic] provided the means to protect the public interest in private land, an issue for Leopold from his first days in the Southwest.”).

269 See id. at 350 (quoting Aldo Leopold, Conservation 1 (Aug. 8, 1946)) (unpublished manuscript, stapled to letter from Horace Fries).

270 See Leshy & McUsic, supra note 12, at 389. Leshy and McUsic propose federal legislation that “directs the responsible federal agency to retire federal land from grazing permanently if the holder of the federal permit requests it.” Id. at 388 (emphasis added). They explain:

By enacting our proposed statute, Congress would be making a national policy decision for the lands managed by the BLM and U.S. Forest Service. This is appropriate because, so long as the lands are owned by the whole nation, the ultimate test is what best serves the national interest. We hasten to add that the statute would not operate unless the owner of the grazing permit decided to sell the permit to the conservation buyer.

Id. at 389. The proviso, which these writers “hasten to add,” is testament to the political clout long wielded by public-land ranchers. See id. Their proposed legislative solution is not sufficient. What is needed is a “national policy decision” by Congress that public-land livestock grazing should end now, not if or when individual ranchers decide to retire.

271 Cf. Newton, supra note 50, at 349 (“Leopold phrased his land ethic in general terms, . . . grounded in the most up-to-date ecological research. Leopold’s guiding land ethic and the goal of land health could be applied to the use and conditions of all lands.”). According to a National Research Council committee, “‘healthy’ rangelands are capable of producing a wealth of tangible goods or commodities other than livestock forage, including ‘wildlife habitat, water, minerals, energy, recreational opportunities, some wood products, and plant and animal genes,’ as well as intangible values and services, including
The national interest standard would seem self-evident.\textsuperscript{273} As rangeland management principles, however, that standard and “land health” have been ignored or misunderstood or manipulated for decades by Congress and agency officials. Two hundred million acres of public lands have been treated as sacrifice areas.\textsuperscript{274} A vanishingly small segment of the population has profited from public resources, to the detriment of nearly every other user, and undermined the lands’ overall, long-term productivity. By any calculus, allowing ranchers to fatten their livestock on public lands has been neither in the national interest nor consistent with maintaining land health.

Public rangelands comprise a heritage of immense, and rapidly appreciating, worth.\textsuperscript{275} The nation’s interest in these lands is best served by conserving their unique values—resources “which can shrink but not grow.”\textsuperscript{276} Restoring and maintaining soils, vegetation, water, and wildlife will generate long-term benefits in the form of ecosystem

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\textsuperscript{272} Newton, supra note 50, at 321 (quoting Leopold, supra note 51, at 221). Leopold explained:

The land consists of soil, water, plants, and animals, but health is more than a sufficiency of these components. It is a state of vigorous self-renewal in each of them, and in all collectively. Such collective functioning of interdependent parts for the maintenance of the whole is characteristic of an organism. In this sense land is an organism, and conservation deals with its functional integrity, or health.

\textit{Id.} at 322 (quoting Aldo Leopold, \textit{Conservation: In Whole or in Part?}, \textit{in The River of the Mother of God and Other Essays by Aldo Leopold}, supra note 17, at 310 (previously unpublished manuscript)). The reintroduction of wolves to Yellowstone has demonstrated the interdependent functioning of the components of the land organism. See discussion supra notes 41–52.

\textsuperscript{273} But see Eric T. Freyfogle, \textit{Federal Lands and Local Communities}, 27 ARIZ. L. REV. 653, 679 (1985) (noting the “longstanding issue of whether federal lands should be managed to further the interests of the national public or should be managed with greater emphasis on the interests of the local public”). I have addressed this issue and disagree with Freyfogle’s suggestion. Donahue, supra note 185, at 729–30 n.39.

\textsuperscript{274} See Leshy & McUsic, supra note 12, at 368, 376–77, 388.

\textsuperscript{275} Rangeland resources and amenities, such as clean water and recreation opportunities, grow in value as our population increases and climate change escalates. See supra notes 178, 184; see, e.g., H. Bradley Kahn, \textit{Uses and Values of the National Elk Refuge, Wyoming}, 104 YALE FORESTRY & ENVTL. STUDIES BULL. 139, 139 (2000) (referring to the Jackson Hole refuge as “one of the most treasured, recognizable, and visited ecosystems in the world”). See generally Jan G. Laitos & Thomas A. Carr, \textit{The Transformation on Public Lands}, 26 ECOLOGY L.Q. 140 (1999).

\textsuperscript{276} Cf. Leopold, supra note 51, at 199 (describing wilderness as a “resource which can shrink but not grow”). The same can be said of most \textit{public} values of public lands.
goods and services, at a scale not otherwise possible. One of these services, as discussed above, is climate change mitigation—\textsuperscript{277} a national interest of the highest order.

On western public lands we have an opportunity—perhaps a final opportunity—to bring back the music of the rivers\textsuperscript{278} and to rebuild the land community. But we must choose between grazing livestock and restoring the land. On the public’s lands, \textit{our land}, the choice should be easy.

\textsuperscript{277} See supra Part IV.

\textsuperscript{278} “[T]he good life on any river,” Leopold suggested, might also “depend on the perception of [the river’s] music, and the preservation of some music to perceive.” Leopold, supra note 51, at 154; see also supra text accompanying note 256.
THE ROBERTS COURT AND THE ENVIRONMENT

STEPHEN M. JOHNSON*

Abstract: During the October 2008 Term, the Supreme Court decided five cases that raised issues of environmental law and the environment was the loser in each case. While it may be difficult to characterize the decisions of the Roberts Court, generally, as “pro-environment” or “anti-environment,” a couple themes consistently appear in the Court’s decisions. First, in most of the environmental cases, the Court has adopted a position advocated or defended by a federal, state or local government when governmental interests are at issue. Second, in all of the cases that implicate federalism concerns, the Court has rendered decisions that favor States’ rights, regardless of whether the decisions are beneficial to, or harmful to, the environment. Finally, while the Court continues to rely primarily on textualism to interpret statutes, the Court has not relied on textualism to support its decisions in most of the cases that have been harmful to the environment.

INTRODUCTION

It is a familiar refrain. According to many academics, the Supreme Court does not treat environmental law as a unique area of law, but treats environmental cases as administrative law, statutory law, or constitutional law cases that merely arise in the context of environmental disputes. Consequently, the Court has been viewed as “irrelevant” in developing environmental law or environmental policy or, worse yet, hostile to the environment.³

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* © 2010, Stephen M. Johnson, Associate Dean and Professor, Walter F. George School of Law, Mercer University. B.S., J.D., Villanova University; LL.M., George Washington University School of Law.


3 See Lazarus, supra note 1, at 705; see also Richard E. Levy & Robert L. Glicksman, Judicial Activism and Restraint in the Supreme Court’s Environmental Law Decisions, 42 Vand. L. Rev.
Professor Richard Lazarus has suggested that his analysis of the voting patterns of Justices in environmental cases over thirty years, and the nature of the Court’s opinions in environmental cases, demonstrate the Court’s increasing hostility.\(^4\) Professor Albert Lin echoed Professor Lazarus’ claim that the Court is hostile to the environment, and asserted that his review of the Court’s decisions in the October 2003 term demonstrated that the Justices relied on textualism and the selective application of federalism to obscure an underlying anti-environment bias.\(^5\)

Several commentators have suggested that the unique nature of environmental law calls for a different approach from the Court. They urge the Court to consider the unique features of environmental disputes when applying general principles of law to the facts in those cases and to shape general principles of law, in part, based on lessons learned in the context of environmental disputes.\(^6\) This article examines the environmental decisions from the first four terms of the Roberts Court to make some initial observations regarding whether the Court appears hostile to the environment and whether it is treating environmental law as a unique body of law.

While the October 2008 Term was particularly harsh for the environment, the Roberts Court, over four terms, has not been overtly hostile to the environment, although the Justices seem to be more polarized in environmental cases and the Courts’ decisions, on the whole, could probably be more harmful to the environment than beneficial.\(^7\) A review of the Roberts Courts’ environmental decisions suggests that, for the most part, the Court continues to treat environmental cases as administrative, statutory, or constitutional law cases that merely arise in the context of environmental disputes.\(^8\) Surprisingly, though, some of the Court’s opinions have been peppered with pro-environment rhetoric.\(^9\)

While it may be difficult to characterize the environmental decisions of the Roberts Court as a whole as “pro-environment” or “anti-environment,” a couple themes consistently appear in the Court’s resolution of those cases. First, in most of the environmental cases that the Court has heard, it has adopted a position advocated or defended by a

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\(^4\) See Lazarus, supra note 1, at 706–07, 771.

\(^5\) See Lin, supra note 3, at 567–68.

\(^6\) See, e.g., Lazarus, supra note 1, at 740–41; Wexler, supra note 1, at 264.

\(^7\) See infra notes 90–105 and accompanying text.

\(^8\) See infra notes 112–68 and accompanying text.

\(^9\) See infra notes 198–211 and accompanying text.
federal, state, or local government when governmental interests are at issue.\textsuperscript{10} As the author of this article noted in a previous article, the Roberts Court appears to adopt a very deferential, “pro-government” approach in environmental cases, and other cases.\textsuperscript{11} Second, in all of the environmental cases that implicate federalism concerns, the Court has rendered decisions that are in favor of States’ rights, regardless of whether the decisions are pro-environment or anti-environment.\textsuperscript{12} If the Court were applying federalism selectively to advance anti-environment policies in the years before the Roberts Court, as Professor Lin suggested, the Roberts Court does not appear to be continuing that trend.\textsuperscript{13} Federalism concerns are being raised and upheld consistently in environmental cases.\textsuperscript{14} Finally, while the Court continues to rely primarily on textualism to interpret statutes, the Court did not rely on textualism to support its decisions in most of the anti-environment cases.\textsuperscript{15} On the contrary, in many of the Court’s pro-environment decisions, the Court relied on the plain meaning of the environmental laws to resolve the cases.\textsuperscript{16}

The following section of this Article, Part I, outlines the criticisms of the Supreme Court’s treatment of “environmental law” prior to the Roberts Term, focusing on the work of Professors Daniel Farber, Richard Lazarus, and Albert Lin. Part II of the Article explores the environmental decisions of the first four terms of the Roberts Court and draws some preliminary conclusions from them. Part III of the Article re-examines those environmental decisions in light of the criticisms raised by professors Farber and Lazarus to the Court’s environmental jurisprudence in the years prior to the Roberts Court. Finally, Part IV briefly explores whether the ascendancy of Justice Sonia Sotomayor, to replace Justice David Souter, may influence the Court’s decision-making in environmental cases.

\textsuperscript{10} See infra notes 112–27 and accompanying text.
\textsuperscript{12} See infra notes 112–24 and accompanying text.
\textsuperscript{13} See Lin, supra note 3, at 619.
\textsuperscript{14} See infra notes 112–24 and accompanying text.
\textsuperscript{15} See infra notes 172–76 and accompanying text.
\textsuperscript{16} See infra notes 172–76 and accompanying text.
I. **ENVIRONMENTAL LAW: THERE’S NO “THERE” THERE**

Academics have frequently asserted that the Supreme Court has not treated environmental law as a distinct area of law in the same way that the Court has treated civil rights law and other substantive areas of law as distinct.\(^\text{17}\) While some have suggested that the Court’s decisions have been irrelevant in shaping environmental law and policy,\(^\text{18}\) others are concerned that the Court’s failure to recognize the unique nature of environmental issues has resulted in a Court that is hostile to environmental concerns.\(^\text{19}\)

Professor Daniel Farber is in the first camp. Based on his review of the Court’s environmental jurisprudence, Farber concluded that the Court’s decisions “have not substantially affected environmental regulation” and that the Court has been “largely irrelevant” since the late 1970s.\(^\text{20}\) Farber asserts that the Court has minimized its influence on the development of environmental law in several important ways: (1) by choosing to hear cases that have “little precedential value” because they involve insignificant issues or have peculiar facts;\(^\text{21}\) (2) by dismissing many cases on jurisdictional grounds and avoiding deciding cases on the merits;\(^\text{22}\) and (3) by resolving issues on narrow, technical grounds or deferring to agency decisions when the Court addresses the merits in environmental cases.\(^\text{23}\) Farber notes a general trend in the Court’s environmental jurisprudence towards limiting the Court’s power in fa-

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\(^{19}\) See Lazarus, *supra* note 1, at 705, 706–07; see also Levy & Glicksman, *supra* note 3, at 346, 421; Lin, *supra* note 3, at 567–68.

\(^{20}\) See Farber, *supra* note 2, at 547–48. Farber recognizes that the key policy decisions for environmental law should be made by Congress or agencies, but he argues that the Court “could help provide direction in interpreting environmental statutes, improve the process by which lower courts review agency decisions, integrate innovative environmental statutes into the general body of existing law, and provide leadership in those significant policy areas that Congress has left to the judiciary rather than the EPA.” *Id.* at 548.

\(^{21}\) *Id.* at 569. Accordingly, Farber laments that the Court has allowed important areas of environmental law to “languish in obscurity,” and has made little contribution to several areas that “provide the bulk of litigation in environmental law,” such as officer and shareholder liability, dischargeability of future Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) claims in bankruptcy, and lender liability and contribution in CERCLA. *Id.* at 552–53.

\(^{22}\) Farber notes that the Court has frequently avoided deciding cases on the merits by restricting standing for environmental plaintiffs. *Id.* at 555–56 (discussing Lujan v. Nat’l Wildlife Fed’n, 497 U.S. 871 (1990) and Lujan v. Defenders of Wildlife, 504 U.S. 555 (1992)).

\(^{23}\) *Id.* at 558–59 (discussing Vt. Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519 (1978) and Chevron U.S.A. Inc. v. NRDC, 467 U.S. 837 (1984)).
vor of the legislative and executive branches. While Farber believes that the Court has not played a significant role in the development of environmental law, he suggests that there are several directions that the Court might take in the future in environmental cases. At the extremes, he suggests that the Court might continue to be irrelevant or that “the Court might embark on a course of judicial activism, crusading for (or more likely against) environmentalism.” Alternatively, he posits that the Court might act as the “legislature’s junior partner,” resolving the questions that Congress does not answer and that agencies cannot answer, and integrating environmental legislation into the existing body of law. More pessimistically, he suggests that the Court might act as an “immune system,” subsuming environmental law within the existing legal regime and limiting changes in legal concepts as applied to environmental matters beyond changes expressly mandated by Congress.

Like Professor Farber, Professor Kenneth Manaster has concluded that the Supreme Court has not been instrumental in developing a separate field of “environmental law.” Manaster notes that the Court resolves most “environmental cases through general doctrines of administrative law and statutory interpretation,” rather than through “specific environmental principles and policies.” Reviewing Justice Stevens’s opinions in environmental cases, Manaster suggests that the Court could play a greater role in crafting “environmental law” in cases involving direct enforcement of environmental statutes or judicial review of agency action under environmental statutes.

Professors Richard Lazarus and Albert Lin are more pessimistic about the role that the Court has taken in shaping environmental law and both see the Court as increasingly hostile to environmental concerns. Based on his review of more than 240 Supreme Court decisions,

\[\text{\textsuperscript{24}} \text{Id. at 556–60.} \]
\[\text{\textsuperscript{25}} \text{Id. at 563.} \]
\[\text{\textsuperscript{26}} \text{Farber, supra note 2, at 563. Regarding activism, Farber argues that “[a]n effort by the courts to usurp the leadership of the political branches would be at best unproductive and at worst a fiasco.” Id.} \]
\[\text{\textsuperscript{27}} \text{Id. at 564–65. In particular, he suggests that the Court could help resolve issues about how to allocate responsibility in CERCLA cases for environmental harm and how to address questions about causation in toxic tort cases. Id.} \]
\[\text{\textsuperscript{28}} \text{Id. at 566. Although he does not ultimately forecast which direction the Court will take, he notes that an “ineffective court . . . can accomplish nothing, for good or for evil.” Id. at 569.} \]
\[\text{\textsuperscript{29}} \text{See Manaster, supra note 1, at 1965.} \]
\[\text{\textsuperscript{30}} \text{Id.} \]
\[\text{\textsuperscript{31}} \text{Id. at 1966–67.} \]
Professor Lazarus concluded that the Justices perceive environmental law as “merely an incidental factual context” and do not recognize that the nature of the environmental concerns is relevant to their resolution of the legal issues in the cases.\textsuperscript{32} Consequently, he asserts that the Court’s indifference and hostility towards environmental law frustrates environmental protection goals, “resulting in substantial losses in environmental quality and public health and welfare.”\textsuperscript{33}

Professor Lazarus bases his conclusions on a review of the voting patterns of Justices in environmental cases, the identity of Justices writing opinions in environmental cases, and the nature of those opinions. First, Professor Lazarus notes that while Justice White wrote the most majority opinions in environmental cases decided by the Court,\textsuperscript{34} his dispassionate, dry, formalistic opinions do not exhibit any environmental ethic and do not suggest that the environmental dimension of the cases played any independent role in the Court’s decisionmaking or reasoning.\textsuperscript{35} The lack of an environmental voice or rhetoric is a trend that he asserts runs throughout the majority opinions in most of the environmental cases by all of the Justices.\textsuperscript{36} Absent in the rulings is any “emphasis on the nature, character, and normative weightiness of environmental protection concerns and their import for judicial construction of relevant legal rules.”\textsuperscript{37} As Professor Lazarus suggests, “the only passionate rhetorical flourishes evident in environmental cases are those penned by Justice Scalia. And they do not trumpet the importance of environmental protection; they question it.”\textsuperscript{38}

\textsuperscript{32} See Lazarus, \textit{supra} note 1, at 706, 708.
\textsuperscript{33} Id. at 706–07.
\textsuperscript{34} Id. at 709. During the period reviewed by Professor Lazarus, commencing with the October Term in 1969 and concluding with the October Term in 1998, Justice White wrote thirty-six environmental opinions. \textit{Id.} The next closest Justice during that time period, Justice O’Connor, only wrote twenty-two opinions. \textit{Id.}
\textsuperscript{35} See id. at 710–11. Professor Lazarus wrote that Justice White’s opinions “do not reflect any deliberation regarding the special demands that environmental protection may place on law and lawmaking institutions” and “[n]or, similarly, do his opinions display any discernible effort to discern and consider how the interests of future generations in environmental protection may warrant consideration in the law’s evolution.” \textit{Id.} at 711.
\textsuperscript{36} Id. at 737. In a separate article, Professor Kenneth Manaster notes that Justice William O. Douglas, who retired in 1975, wrote passionate opinions on environmental issues and that no Justice, including Justice Stevens, who replaced him, has emerged as an heir to his legacy. \textit{See} Manaster, \textit{supra} note 1, at 1964.
\textsuperscript{37} See Lazarus, \textit{supra} note 1, at 737.
\textsuperscript{38} Id. at 739.
Professor Lazarus also notes that while Justice Kennedy voted in the majority in environmental cases more than any other Justice, and, consequently influences the Court more than any other Justice on environmental matters, he has written very few opinions in those cases. Thus, as Lazarus points out, “[t]he most significant vote has had little to no direct expression in the Court’s opinion writing” and “[t]he upshot is the exacerbation of the Court’s longstanding lack of environmental voice.”

Most significantly, though, Professor Lazarus bases his conclusion that the Court is becoming increasingly hostile to the environment on his analysis of the voting patterns of the Justices. When he engages in a qualitative and anecdotal review of the Justices’ voting, Professor Lazarus concludes that the evidence suggests that most of the Justices were not influenced by the environmental context of the cases. He illustrates how several seemingly pro-environment Justices have authored or joined anti-environment decisions and vice versa. However, Professor Lazarus moves beyond a qualitative review of the Justices voting and engages in a quantitative review of the Justices, assigning each an environmental protection (EP) score based on the frequency with which they have voted in favor of the environment in their decisions in environmental cases. Based on his review of the EP scores, he concludes

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39 Id. at 714–15. Professor Lazarus indicated that, other than an original action involving an interstate water compact, Justice Kennedy dissented in only one case, Pennsylvania v. Union Gas Co., 491 U.S. 1 (1989), of the fifty-seven environmental cases in which he participated and that the Court later overruled the decision in that case. See Lazarus, supra note 1, at 714–15. Thus, he notes that Justice Kennedy voted with the majority more than ninety-six percent of the time. Id. at 713. Professor Lazarus updated his findings in a later article to include decisions of the October 1999 and 2000 terms, and Justice Kennedy only dissented one more time during those terms. See Richard J. Lazarus, Environmental Law and the Supreme Court: Three Years Later, 19 Pace Envtl. L. Rev. 653, 656 (2002).

40 Lazarus, supra note 1, at 715. During the time period that Professor Lazarus reviewed, Justice Kennedy only wrote four majority opinions, with half of those coming during the October 1998 Term. See id. He wrote an additional two opinions during the October 1999 and 2000 terms. See Lazarus, supra note 39, at 656.

41 Lazarus, supra note 1, at 715.

42 Id. at 716.

43 See id.

44 Id. at 718–22. Professor Lazarus selected 100 of the 240 environmental Supreme Court decisions that more readily lent themselves to a designation as a pro-environmental or anti-environmental decision for scoring purposes. Id. He assigned each Justice one point for each pro-environmental outcome for which they voted and the final score (“EP score”) for each Justice was based on the percentage of pro-environmental votes that the Justice cast in the 100 cases that Professor Lazarus reviewed. Id. Professor Lazarus acknowledges that a scoring system like his could be arbitrary because many cases may not lend themselves to pro-environmental and anti-environmental labels. Id. He attempts to
that for some Justices, the environmental context of a case did influence their voting.\footnote{Id. at 716.} In addition, he concludes that some Justices are becoming increasingly anti-environmental.\footnote{Id. at 737.}

While Professor Lazarus recognizes that it is hard to draw fine distinctions between Justices based on their EP scores, he suggests that some conclusions can be drawn regarding Justices who have scores at the very high end or low end of the scale.\footnote{Lazarus, supra note 1, at 723. Professor Lazarus admits that in many cases, whether an “outcome happened to be more or less environmentally protective had little . . . impact on an individual Justice’s decision to vote one way rather than another.” Id. at 722. Nevertheless, while Professor Lazarus recognizes that conclusions should not be drawn from small differences in scores, he suggests that “for those few Justices with scores either very high or very low, it is at least plausible to theorize that the environmental protection dimension influenced their vote one way or the other.” Id. at 723.} Specifically, he asserts that “[a] fair case” can be made that the environmental protection dimension of cases influenced a Justice if the Justice’s score is greater than sixty-six (meaning that they supported the pro-environment position in sixty-six percent or more of the cases) or less than thirty-three (meaning that they supported the pro-environment position in thirty-three percent or less of the cases), and that “a strong case” can be made if the Justice’s score is greater than seventy-five or less than twenty-five.\footnote{Id.} Reviewing the EP scores, Professor Lazarus noted that none of the sitting Justices at the time scored higher than sixty-six, while Justices Scalia (13.8), Thomas (20) and Kennedy (25.9) all scored lower than thirty-three.\footnote{Id. at 724–27, 812 app. D.} His analysis of the EP scores also formed the basis for his assertion that the Court, as a whole, is becoming less responsive to environmental protection.\footnote{See id. at 736–37.} Specifically, he noted that in 1975, there were no Justices with an EP score of twenty or lower, only one Justice with a score of thirty-three or lower, and one Justice with a score over sixty-six.\footnote{Id. at 735.} By 1999, though, there were two Justices with a score of twenty or lower, four Justices with a score of thirty-three or lower, and no Justices with a score over sixty-six.\footnote{Id.}

Professor Lazarus is concerned about the Court’s indifference or hostility towards environmental law because the nature of the injury in account for that concern by focusing only on the 100 of 240 cases that can be characterized as pro-environmental or anti-environmental. \textit{Id.} at 723.
environmental cases is unique, and because he believes that the Court’s analysis of the law in the cases should be informed by, and respond to, the unique character of the injury. He contends that environmental considerations should inform the development of other areas of law or, at a minimum, the Court should consider the unique issues raised by environmental disputes when applying other areas of law in the environmental context.

Professor Albert Lin also believes that the Court is becoming increasingly hostile to environmental law and bases his conclusions on an analysis of the Court’s decisions during the 2003–2004 Term, as well as prior environmental jurisprudence. The Court decided an unusually high number of cases involving the environment and natural resources during that Term and the decisions “generally resulted in the weakening of environmental law.” Reviewing the cases, Lin concludes that the decisions “continue a trend in the gradual but discernible erosion of environmental law and of governmental authority to address environmental concerns.”

Reviewing the seven cases decided by the Court during the Term, Professor Lin observed that all of the cases involved questions of statutory interpretation, none posed fundamental constitutional questions, and all of the cases had been decided in favor of the environmental interests below. Professor Lin suggested that the Court’s selection of cases implied “a skepticism . . . of lower court rulings favorable to environmentalists.” More generally, he asserted that the court eroded environmental law through the use of (1) textualism; (2) importation of common law causation analysis into statutory schemes; and (3) the selective invocation of federalism principles to inform statutory interpretation.

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53 See Lazarus, supra note 1, at 744–48. Professor Lazarus suggests that the injuries addressed in environmental law are unique because they are often (1) irreversible, catastrophic, and continuing; (2) physically distant; (3) temporally distant; (4) enveloped by uncertainty and risk; (5) caused by multiple sources; and (6) non-economic and non-human. Id.
54 Id. at 756.
55 See id. at 740–41.
56 Id. at 741.
57 See Lin, supra note 3, at 567–69.
58 Id. at 567.
59 Id. at 568.
60 Id. at 570.
61 Id.
62 Id. at 568.
First, Professor Lin observed that the Court increasingly relies on textualism in interpreting statutes and that, in at least two of the cases, the Court used textualism to interpret environmental statutes in a manner that was contrary to legislative intent.\(^63\) This is particularly troubling because, as Lin notes, Justices often mask their policy choices in neutral terms when purporting to interpret a statute according to its plain meaning.\(^64\) He suggests that textualist Justices disguise anti-regulatory environmental policy choices by (1) interpreting statutes narrowly, without regard to the purposes of the statute;\(^65\) (2) deferring less frequently to agency interpretations, again thereby ignoring the policy concerns considered by the agencies;\(^66\) and (3) ignoring legislative history.\(^67\)

After examining the impact of textualism on the Court’s environmental decisions during the 2003 Term, Professor Lin argued that the Court narrowed the scope of environmental regulation in three cases in a manner that was, to some extent, inconsistent with textualism, by importing proximate cause analysis into the statute.\(^68\)

Finally, Professor Lin asserted that the Court selectively adopted or rejected federalism arguments in a manner that limited environmental protection.\(^69\) Specifically, Lin noted that three of the environmental cases decided that term involved a conflict between federal and state regulatory authority and presented opportunities for the Court to expand its federalism jurisprudence.\(^70\) Reviewing the cases, though, he asserted that “no obvious federalism theme . . . emerged. Collectively, these three decisions instead support the thesis that members of the Court voice federalism concerns inconsistently and opportunistically.”\(^71\)

While Professor Lin concludes that the Court is eroding environmental law, he does not assert that the Court is engaging in judicial ac-

\(^{63}\) Lin, supra note 3, at 580–81.

\(^{64}\) Id. at 580. Lin also discussed Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, 531 U.S. 159 (2001) as an example of a decision where the Court used a textualist approach to reach a conclusion that was at odds with the purposes of a statute. Id. at 595–98.

\(^{65}\) Id. at 601–03.

\(^{66}\) Id. at 603–04.

\(^{67}\) Id. at 604–05.

\(^{68}\) Id. at 618–19.

\(^{69}\) Lin, supra note 3, at 626.

\(^{70}\) Id. at 619. Professor Lin identified Alaska Department of Environmental Conservation v. EPA, 540 U.S. 461 (2004); Engine Manufacturers Ass’n v. South Coast Air Quality Management District, 541 U.S. 246 (2004); and South Florida Water Management District v. Miccosukee Tribe of Indians, 541 U.S. 95 (2004) as cases involving conflicts between state and federal regulatory authority. See id.

\(^{71}\) Id. at 626.
tivism in the environmental arena. Instead, he concludes that the Court is adopting what Professor Farber described as the “Court as an immune system” approach, utilizing other tools of legal analysis to subsume environmental regulation within the existing legal order. 72 Ultimately, he asserts that the Court is subverting environmental law and that “[e]xposing the political nature and consequences of their actions is the first step in holding the Court accountable and in ultimately combating the subversion.” 73

Professor Jay Wexler does not conclude that the Court is hostile to the environment, but he agrees with Professor Lazarus, Professor Lin, and others that the Court is not recognizing the unique nature of environmental law. 74 His recommendations for the direction that the Court should take in environmental cases echo the recommendations of Professor Lazarus that are outlined above. In a recent article, Professor Wexler examines seven paradigms that federal courts, including the Supreme Court, could take when deciding environmental cases. 75 He ultimately concludes that because of the unique nature of environmental law, courts should not “apply generally applicable legal principles without any special concern for the environmental aspects of the case.” 76 Instead, he urges that “courts should consider the distinctive features of ecological injury when applying facts to law, and . . . should draw on their knowledge of those distinctive features when fashioning rules of general application.” 77

Most of the literature that critiques the Supreme Court’s impact on the development of a unique body of “environmental law” examines

72 Id. at 634.
73 Id. at 635.
74 See Wexler, supra note 1, at 260–62.
75 Id. at 262–63. Wexler suggests that courts might:

(1) supplant generally applicable principles from other areas of law with principles applicable only to environmental law; (2) retain general principles from other areas of law but apply them in a special manner in environmental law cases; (3) shape general principles of law through an understanding of environmental problems; (4) pay strong attention to the factual nuances of environmental problems when applying facts to general principles of law; (5) apply general principles of law to environmental law problems but employ environment-related rhetoric or provide advice relating to environmental protection; (6) decide environmental law cases on the basis of preferred outcomes regarding the environment; or (7) apply generally applicable legal principles without any special concern for the environmental aspects of the case.

76 Id. at 263.
77 Id. at 264.
the decisions of the Court prior to the ascendancy of Chief Justice Roberts. The remainder of this Article explores whether the environmental decisions of the Roberts Court follow the trends outlined above. Although the Roberts Court has only completed four terms, at least one other academic, Professor Jonathan Adler, has already expressed some preliminary opinions regarding the Court’s decisions in environmental cases.78

Instead of focusing on whether the Court is hostile to the environment or is creating a unique body of “environmental law,” though, Professor Adler reviewed sixteen “environmental law” decisions from the first four terms of the Roberts Court to explore whether the Court was adopting a “pro-business” approach in those cases.79 In the same way that Professor Lazarus recognized that classifying cases as “pro-environment” and “anti-environment” is often difficult, Professor Adler pointed out that business interests are often opposed in environmental disputes, so it is often difficult to classify decisions as “pro-business” or “anti-business.”80 Nevertheless, Adler determined that it was possible to identify the position that is supported by the balance of business interests, and that produces a rule that on the whole works to the benefit of business in all of the cases. He concluded that the decisions did not show a “pro-business” bias or orientation.81 Specifically, he found that the Court adopted a “pro-business” position in only eight of the sixteen cases that he reviewed.82 More importantly, he noted that most of the “pro-business” decisions occurred in narrow cases that had little effect on pre-existing law, while the decisions that harmed businesses were quite dramatic and will have profound effects on economic interests.83 He also stressed that the nature of the Court’s decisions is important in determining whether the Court is “pro-business” or “anti-business.”84 Specifically, he suggested that cases in which the Court adopts a pro-business interpretation of a statute, which can be overridden by Con-

78 See generally Jonathan H. Adler, Business, the Environment, and the Roberts Court: A Preliminary Assessment, 49 Santa Clara L. Rev. 943 (2009) (exploring whether the Roberts Court is actually “pro-business” through the lens of environmental law).
79 Id. at 952–53.
80 Id. at 952.
81 Id. at 953. More generally, though, he admitted that the Roberts Court could be “called ‘pro-business’ insofar as it is sympathetic to some basic business-oriented legal claims, it reads statutes narrowly, it resists finding implied causes of action,” and “it does not place its finger on the scales to assist non-business litigants.” Id. at 951.
82 Id. at 953.
83 Id. at 954.
84 See Adler, supra note 78, at 950.
gress, are less significant than cases in which the Court announces a substantive rule of constitutional law that benefits businesses.\textsuperscript{85}

While Adler did not find a “pro-business” bent to the Roberts Court’s environmental decisions, he suggested that the Court may have a “pro-government” bent, as the Court ruled in favor of the government in more than two-thirds of the cases in which government interests were at stake.\textsuperscript{86} Part II of this Article examines many of those same cases to assess whether the Roberts Court is hostile to the environment and to explore factors that may be influencing the Court in environmental cases.

\section*{II. The Roberts Court: The First Four Terms}

\subsection*{A. General Observations on the Environmental Law Cases}

During its first four terms, the Roberts Court decided fourteen “environmental law” cases.\textsuperscript{87} While it is dangerous to reach conclusions based on such a small sample, some preliminary observations can be made about the Court’s decisions. Consistent with recent history prior to the Roberts Court, most of the “environmental law” cases decided by the Roberts Court (seventy-one percent) involved statutory interpretation, as opposed to constitutional law or other issues.\textsuperscript{88} Similarly, seventy-one percent of the Court’s decisions reversed lower court decisions, and the Court reversed all six of the cases that it reviewed from the Ninth Circuit.\textsuperscript{89} While this could be interpreted as consistent with Professor Albert Lin’s charge that the Supreme Court is often skeptical towards

\begin{footnotesize}
\begin{enumerate}
\item \textit{Id.}
\item \textit{Id.} at 972–73. Professor Adler implies, though, that the Court might be less deferential to the government once it begins to review environmental decisions made by, or supported by, President Obama’s Administration. \textit{See id.} at 975.
\item \textit{Infra} app. A. While it is difficult to define the contours of what constitutes “environmental law,” for purposes of this Article, the universe was limited to cases involving disputes arising under environmental statutes, and cases that directly raised issues that are central to environmental law in the context of environmental disputes, including cases addressing the Dormant Commerce Clause, takings, and punitive damages. In addition to the cases examined in this Article, during the prior four terms, the Roberts Court decided five cases that involved environment or natural resources agencies or were otherwise tangentially related to environmental law. \textit{See generally} Carcieri v. Salazar, 129 S. Ct. 1058 (2009); New Jersey v. Delaware, 552 U.S. 597 (2008); Rockwell Int’l Corp. v. United States, 549 U.S. 457 (2007); Wilkie v. Robbins, 551 U.S. 537 (2007); BP America Prod. Co. v. Burton, 549 U.S. 84 (2006). Those five cases were not included in the statistical analyses in this Article.
\item \textit{See infra} app. A. Ten of the fourteen cases involved statutory interpretation.
\item \textit{See infra} app. A.
\end{enumerate}
\end{footnotesize}
lower court rulings favorable to environmentalists, the Court’s reversal rate in environmental cases is similar to its reversal rate for all cases that it decided over the prior four terms.

On balance, while the Roberts Court cannot be characterized as overtly hostile to the environment, the Court’s decisions are generally more harmful than beneficial to the environment. Quantitatively, only forty-three percent of the Court’s decisions can be characterized as “pro-environment,” and environmental groups were on the losing side in seventy-one percent of the cases in which they participated.

Looking beyond the numbers, the “anti-environment” decisions appear to be bigger losses for the environment than the “pro-environment” decisions are wins. In Coeur Alaska, Inc. v. Southeast Alaska Conservation Council, the Court exempted discharges of mining waste and potentially many other categories of waste from technology-based pollution controls under the Clean Water Act. In Entergy Corp. v. Riverkeeper, Inc., the Court allowed the Environmental Protection Agency to consider costs in setting pollution control standards under the Clean Water Act, although the statute did not explicitly allow the agency to consider costs, perhaps foreshadowing the Court’s interpretation of other environmental statutes to allow greater use of cost benefit analysis without explicit authorization. In Winter v. NRDC, the Court weakened precedent that encouraged courts to issue injunctions to require compliance with procedural requirements of environmental laws. Similarly, in

90 See Lin, supra note 3, at 570.
92 See infra app. A.
95 See 129 S. Ct. 1498, 1508–09 (2009).
Summers v. Earth Island Institute, the Court limited standing for persons bringing challenges based on harm to procedural rights.\(^\text{97}\) In Burlington Northern & Santa Fe Railway Co. v. United States, the Court reduced the scope of liable parties under the Superfund law and thereby reduced the funds available for Superfund cleanups in some cases.\(^\text{98}\) In Exxon Shipping Co. v. Baker, the Court imposed limits on the amount of punitive damages that can be awarded for pollution caused by oil spills under maritime law.\(^\text{99}\) In National Ass’n of Home Builders v. Defenders of Wildlife, the Court limited the scope of the duty of federal agencies to protect endangered species.\(^\text{100}\) Finally, contrary to predictions from several Justices in Rapanos v. United States,\(^\text{101}\) the Court’s decision in that case has resulted in a significant reduction in waters protected under the Clean Water Act.\(^\text{102}\)

On the “pro-environment” side of the ledger, Massachusetts v. EPA was clearly a positive decision for the environment, as the Court determined that EPA acted unreasonably in justifying its failure to regulate greenhouse gases as air pollutants for purposes of provisions of the Clean Air Act regarding motor vehicle emissions.\(^\text{103}\) However, to the extent that the Court’s decision broadened standing principles, its reach is probably limited to lawsuits by States, as the Court already limited portions of the decision that addressed standing to protect procedural rights in the Summers decision.\(^\text{104}\) United Haulers Ass’n v. Oneida-Herkimer Solid Waste Management Authority was another positive environmental decision, as the Court upheld, against a Commerce Clause challenge, a local “flow control” ordinance that required waste to be sent to government owned solid waste processing facilities.\(^\text{105}\) However, it is clear that the reach of the Court’s holding in that case is limited to

\(^{97}\) 129 S. Ct. 1142, 1151 (2009).
\(^{100}\) 551 U.S. 644, 671–72 (2007).
\(^{102}\) A recent report from the EPA’s Office of Inspector General noted that almost 500 enforcement cases have been affected by the decision, “such that . . . enforcement was not pursued as a result of jurisdictional uncertainty, case priority was lowered as a result of jurisdictional uncertainty, or lack of jurisdiction” was raised as a defense in the enforcement action due to the Rapanos decision. Office of Inspector Gen., Env’t. Prot. Agency, Rep. No. 09-N-0149, Congressionally Requested Report on Comments Related to Effects of Jurisdictional Uncertainty on Clean Water Act Implementation 1 (2009), available at http://www.epa.gov/oig/reports/2009/20090430-09-N-0149.pdf.
\(^{104}\) See 129 S. Ct. 1142, 1151 (2009).
publicly owned facilities. It is also significant that the Roberts Court issued “anti-environment” decisions in sixty percent of the cases involving constitutional law or common law issues, but issued “pro-environment” decisions in cases involving statutory interpretation as often as it issued “anti-environment” decisions. As Professor Adler pointed out in analyzing whether the Roberts Court is “pro-business”, the Court’s rulings in cases involving constitutional or common law issues may be more significant in defining the Court as “pro-business” because, unlike the Court’s statutory interpretation decisions, those rulings cannot be overridden by Congress.

While it is difficult to classify the Roberts Court as “anti-environment” or “pro-environment” based on the small sample of environmental cases decided so far, there does seem to be a clear “pro-government” trend in the Court’s environmental decisions. In more than two-thirds of the decisions, the Court ruled in favor of the position advocated by the federal government or a state or local government. This

106 Id.
107 In John R. Sand & Gravel Co. v. United States, the Court held that there was no implied “equitable tolling” exception to the statute of limitations for takings claims brought in the Court of Federal Claims. 552 U.S. 130, 136 (2008). In United States v. Atlantic Research Corp., the Court held that liable parties can sue other liable parties under section 107 of the Superfund law to recover costs that they have incurred in cleaning up releases of hazardous substances. 551 U.S. 128, 139 (2007). In S.D. Warren v. Maine Board of Environmental Protection, the Court concluded that discharges from a dam triggered the state review and approval procedures of section 401 of the Clean Water Act. 547 U.S. 370, 373 (2006). Finally, in Environmental Defense v. Duke Energy Corp., the Court upheld air quality standards adopted by EPA that applied to modifications of stationary sources. 549 U.S. 561, 566 (2007).
108 See infra app. A.
109 See infra app. A.
110 See Adler, supra note 78, at 950.
appears consistent with a more general trend, explored by the author of this Article in an earlier article, of the Roberts Court to accord greater deference to agencies.\textsuperscript{112} Professor Adler, in his exploration of the Roberts Court’s environmental decisions, suggested that the Court’s pro-government decision-making results from deference to other branches of government and narrow statutory interpretation.\textsuperscript{113}

B. Federalism, Chevron, and Textualism

Instead of focusing on whether the Roberts Court can be characterized as “anti-environment” or “pro-government,” it may be more useful to examine three significant factors that seem to be significantly impacting the Roberts Court’s rulings in environmental law cases thus far: federalism, \textit{Chevron} deference, and textualism.

1. Federalism

In the environmental cases where federalism issues have been implicated, the Roberts Court has ruled in favor of the interests of States and local governments in every case.\textsuperscript{114} In some cases, this yielded a “pro-environment” ruling, while in others, it yielded an “anti-environment” ruling. Rather than opportunistically and unevenly applying federalism principles to achieve “anti-environment” results, as Professor Lin suggested the Rehnquist Court was doing during the 2003 term,\textsuperscript{115} the Roberts Court appears to be applying federalism principles vigorously and consistently, regardless of whether the application yields “pro-environment” or “anti-environment” results.

For instance, in \textit{S.D. Warren v. Maine Board of Environmental Protection}, the Court reviewed whether operating a dam results in a “discharge” under the Clean Water Act that triggers a process where States can review and impose conditions on the discharge to meet state water


\textsuperscript{112} See Johnson, \textit{supra} note 11, at 2.

\textsuperscript{113} See Adler, \textit{supra} note 78, at 951.

\textsuperscript{114} See \textit{United Haulers}, 550 U.S. at 334; \textit{Rapanos}, 547 U.S. at 742–45; \textit{S.D. Warren}, 547 U.S. at 386–87.

\textsuperscript{115} See Lin, \textit{supra} note 3, at 569, 619.
pollution standards. While the Court found that the operation of the dam results in “discharge” under the plain meaning of the term, it also discussed the purpose of the law and stressed that:

[c]hanges in the river like these fall within a State’s legitimate legislative business, and the Clean Water Act provides for a system that respects the States’ concerns . . . . State certifications under [section] 401 are essential in the scheme to preserve state authority to address the broad range of pollution . . . . Reading section 401 to give “discharge” its common and ordinary meaning preserves the state authority apparently intended.

Similarly, in United Haulers v. Oneida-Herkimer Solid Waste Management Authority, the Court reviewed the constitutionality of an ordinance that required persons who collected waste within Oneida and Herkimer Counties in New York State to deliver the waste to a processing facility operated by the Oneida-Herkimer Solid Waste Management Authority. In upholding the constitutionality of the scheme against a Commerce Clause challenge, a plurality of the Court distinguished the case from a prior decision where the Court had struck down a similar flow control ordinance. The plurality stressed that the case at bar was different from the precedent case because the facility to which the waste was directed was a state-created public benefit corporation. The plurality stressed that:

“[c]ompelling reasons justify treating these laws differently from laws favoring particular private businesses over their competitors. . . . States and municipalities are not private businesses—far from it. Unlike private enterprise, government is vested with the responsibility of protecting the health, safety, and welfare of its citizens. . . . These important responsibilities set state and local government apart from a typical private business. . . . Given these differences, it does not make sense to regard laws favoring local government and laws favoring private industry with equal skepticism.”

116 547 U.S. at 373.
117 Id. at 386–87.
118 550 U.S. at 334.
119 Id. at 340–41.
120 Id. at 340.
121 Id. at 342–43.
Justices Scalia and Thomas wrote separate concurring opinions to criticize the general concept of the Dormant Commerce Clause and to advocate for greater state authority.\footnote{122 See id. at 348 (Scalia, J., concurring); id. at 349 (Thomas, J., concurring).}

While federalism concerns helped spur “pro-environment” decisions in \textit{S.D. Warren} and \textit{United Haulers}, they spurred an “anti-environment” decision in \textit{Rapanos v. United States}.\footnote{123 See generally United Haulers Ass’n v. Oneida-Herkimer Solid Waste Mgmt. Auth., 550 U.S. 330 (2007); Rapanos v. United States, 547 U.S. 715 (2006); S.D. Warren Co. v. Maine Bd. of Envtl. Prot., 547 U.S. 370 (2006).} In \textit{Rapanos}, the Court reviewed whether certain non-navigable waters and wetlands adjacent to “traditional navigable waters” were regulated under the Clean Water Act.\footnote{124 547 U.S. at 729–30.} In voting to limit the reach of Clean Water Act jurisdiction, the plurality first noted that the purposes of the Act include preserving the primary responsibility of States “to prevent, reduce and eliminate [water] pollution.”\footnote{125 Id. at 737.} The plurality then found that the U.S. Army Corps of Engineers interpretation of the statute to regulate all non-navigable tributaries of waters of the United States and adjacent wetlands would “result in a significant impingement of the States’ traditional and primary power over land and water use.”\footnote{126 Id. at 737–38 (citations omitted).} In a concurring opinion, Justice Kennedy argued that the scope of jurisdiction should be tied to the “significant nexus” test created by the Court in \textit{Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers},\footnote{127 531 U.S. 159, 167 (2001).} a case where the Court interpreted the Clean Water Act narrowly in order to avoid interfering with traditional State power over land and water use.\footnote{128 Rapanos, 547 U.S. at 766–67 (Kennedy, J., concurring).}

Even in cases where federalism concerns were not directly raised, but States were advocates, the Roberts Court frequently ruled in favor of the States. In \textit{Massachusetts v. EPA}, for instance, the Court created generous standing rules for States, which it stressed are not “normal litigants,” and concluded that Massachusetts had standing to sue because its risk of injury would be reduced “to some extent” by the relief it sought.\footnote{129 549 U.S. 497, 518, 526 (2007).} Similarly, the State of Alaska was a petitioner in \textit{Coeur Alaska v. Southeast Alaska Conservation Council}, and the Court ruled in its favor, finding that the disposal of mining waste in Lower Slate Lake did not need to comply with pollution standards under section 402 of the
Clean Water Act. However, in *Entergy Corporation v. Riverkeeper*, the Court rejected a challenge brought by States to EPA’s regulations that imposed pollution limits for cooling water intake structures based on cost considerations.

2. *Chevron*

Just as federalism has been an important factor that has influenced the Court’s decisionmaking in environmental law cases, *Chevron* deference has also been an important factor in many of the cases involving statutory interpretation, but *Chevron* deference has contributed to generally “anti-environment” decisions. In a sample of recent environmental law cases where *Chevron* applied, the Roberts Court upheld the agencies’ interpretation of the statute in sixty percent of the cases. In all of the cases where the Court upheld the agencies’ interpretation of the statute, the Court’s decision was harmful, rather than beneficial, to the environment.

One thing that is interesting about the Roberts Court’s application of *Chevron* to these environmental law cases is that the Court has gener-

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130 129 S. Ct. 2458, 2474 (2009).
131 129 S. Ct. 1498, 1510 (2009).
132 *Chevron U.S.A. Inc. v. NRDC* established a two-part test for courts to use when reviewing legislative rules and other agency actions. 467 U.S. 837, 842–43 (1984). At step one, if Congress has directly spoken to the precise question at issue, courts should give effect to Congress’s intent. *Id.* At step two, though, if the statute is silent or ambiguous regarding the question at issue, courts should defer to reasonable agency interpretations of the statute. *Id.*
133 Five cases—*Coeur Alaska v. Southeast Alaska Conservation Council*, 129 S. Ct. at 2469; *Entergy Corp. v. Riverkeeper, Inc.*, 129 S. Ct. at 1515; *National Ass’n of Home Builders v. Defenders of Wildlife*, 551 U.S. 644, 665–66 (2007); *Massachusetts v. EPA*, 549 U.S. at 527; and *Rapanos*, 547 U.S. at 739—involved *Chevron* deference. The Court deferred to the agency’s interpretation in three of the five cases—*Coeur Alaska*, 129 S. Ct. at 2474, *Entergy*, 129 S. Ct. at 1515, and *National Ass’n of Home Builders*, 551 U.S. at 665–66—all of which were “anti-environment” decisions. The Court did not defer to the agency’s interpretation in the other two cases, *Massachusetts v. EPA*, 549 U.S. at 529 (pro-environment) and *Rapanos* 547 U.S. at 739 (anti-environment). While the plurality in *Rapanos* did not apply *Chevron*, the dissenters and Justice Kennedy, in his concurring opinion, applied *Chevron*. 547 U.S. at 766 (Kennedy, J., concurring); *id.* at 788 (Stevens, J., dissenting). While the Court used a method of analysis that appears to be the *Chevron* analysis in the *Duke Energy* case, the Court did not cite *Chevron* in that case or discuss the two steps of the analysis in the case. See 549 U.S. 561, 578–82 (2007).
134 See *Coeur Alaska*, 129 S. Ct. at 2474 (exempting discharges of mining waste from technology based standards that would apply to permits issued under section 402 of the Clean Water Act); *Entergy*, 129 S. Ct. at 1510 (authorizing the consideration of cost benefit analysis in setting standards for cooling water intake structures); *Nat’l Ass’n of Home Builders*, 551 U.S. at 665–67 (holding that EPA need not comply with section 7(a)(2) of the Endangered Species Act when delegating authority to the State of Alaska to issue water pollution permits).
ally resolved the statutory interpretation question at step two of *Chevron*, rather than at step one. All of the Court’s “anti-environment” *Chevron* decisions have been resolved at step two, rather than step one. For instance, in *Coeur Alaska*, the majority determined that Congress did not directly speak to the precise question of whether EPA’s pollution standards under section 306 of the Clean Water Act applied to fill material, so the Court deferred to the agency’s determination that the standards did not apply. Similarly, in the *Entergy* decision, the majority inverted the *Chevron* analysis and did not directly address whether the statute was ambiguous, but concluded that EPA acted reasonably in interpreting the Clean Water Act to authorize the consideration of costs in setting technology-based pollution control standards for cooling water intake structures. Finally, in the *National Ass’n of Home Builders* case, the majority determined that the conflict between the provisions of the Endangered Species Act and the Clean Water Act rendered the provision in the Clean Water Act regarding delegation of federal water pollution permitting authority to States ambiguous. Moving to step two, the Court upheld EPA’s decision that it was not necessary to consider the requirements of section 7(a)(2) of the Endangered Species Act when deciding whether to approve delegation of the permitting program as reasonable.

While this is admittedly a very small sample, it is interesting to note that the Roberts Court’s approach in those cases runs counter to a trend suggested by academics in the mid-1990’s, when many commentators were convinced that judges were less likely to find statutes ambiguous at step one because judges were increasingly adopting a textualist approach to statutory interpretation. Under *Chevron*, if a statute is not ambiguous, there is no need to defer to the agency’s interpretation of

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135 *See Coeur Alaska*, 129 S. Ct. at 2474; *Entergy*, 129 S. Ct. at 1510; *Nat’l Ass’n of Home Builders*, 551 U.S. at 665–66. The final “anti-environment” *Chevron* case was also decided at step two, by all of the Justices who applied *Chevron*. The dissenting Justices and Justice Kennedy, in his concurring opinion, all found the Clean Water Act ambiguous, but the dissenting Justices would have deferred to the agency, while Justice Kennedy did not; the plurality in *Rapanos* did not apply *Chevron*. 547 U.S. at 739, 766, 788.

136 129 S. Ct. at 2469–74.

137 129 S. Ct. at 1505–10.

138 551 U.S. at 666–68.

139 *Id.*

Thus, in *Massachusetts v. EPA*, for example, the Court owed no deference to the agency’s interpretation of the statute.\(^\text{141}\)

While the Court did not defer to EPA in *Massachusetts v. EPA*, the Roberts Court’s *Chevron* decisions generally accord broad deference to agencies. In *Entergy*, for instance, the majority of the Court indicated that it was appropriate to defer to EPA’s regulatory interpretation of the Clean Water Act to authorize the consideration of costs in setting technology-based pollution standards because the agency had consistently provided guidance over several decades suggesting that costs could be considered in setting pollution control standards for cooling water intake structures on a case-by-case basis.\(^\text{143}\) However, as Justice Breyer noted in dissent, it appeared that the agency considered costs in its regulation in a manner that was different from the approach it had traditionally used. Therefore, the Court should not have deferred to the “traditional” interpretation of the statute—at least without some explanation for the change in interpretation—since the traditional interpretation may have been a different interpretation than the one advanced by the agency in its regulation.\(^\text{144}\)

*Coeur Alaska* is another case where the Court accorded the EPA exceedingly broad discretion.\(^\text{145}\) When the majority discussed whether the pollution standards under section 306 of the Clean Water Act applied to the discharge of fill material, the Court recognized that not only was the statute ambiguous, but the agency’s regulation was also ambiguous.\(^\text{146}\) Accordingly, pursuant to *Auer v. Robbins*, which holds that an agency’s interpretation of its own regulations is entitled to deference unless it is plainly erroneous or inconsistent with the regulations,\(^\text{147}\) the Court in *Coeur Alaska* deferred to a memorandum that was sent from EPA’s headquarters to its regional office indicating that the pollution standards should not be applied to the discharge of fill material into Lower Slate Lake.\(^\text{148}\) Justice Scalia wrote a separate concurrence to stress that while he agreed that the Court should defer to the agency’s interpretation, the Court was applying *Auer* in a situation where the case should not apply.\(^\text{149}\) Scalia wrote that “it becomes obvious . . . that


\(^{143}\) 129 S. Ct. 1498, 1509–10 (2009).

\(^{144}\) Id. at 1515–16 (Breyer, J., dissenting).


\(^{146}\) Id.

\(^{147}\) 519 U.S. 452, 461 (1997).

\(^{148}\) 129 S. Ct. at 2476.

\(^{149}\) Id. at 2479 (Scalia, J., concurring).
the referenced ‘regulatory scheme,’ and ‘regulatory regime’ for which the Court accepts the agency interpretation includes not just the agencies’ own regulations but also (and indeed primarily) the conformity of those regulations with the ambiguous governing statute, which is the primary dispute here.” He argued that the Court was according *Chevron* deference or its equivalent to informal agency guidance, which is not owed *Chevron* deference pursuant to the Supreme Court’s decision in *United States v. Mead*.

The Court’s reasoning in *Coeur Alaska* also seems to be at odds with the reasoning adopted by the Court in 2006 in *Gonzales v. Oregon*. The *Gonzales* Court created an exception to *Auer*, holding that the Court does not accord such deference to an agency interpretation when the agency is interpreting a regulation that merely restates or paraphrases the statutory language. The Court stressed that “the question here is not the meaning of the regulation but the meaning of the statute. An agency does not acquire special authority to interpret its own words when, instead of using its expertise and experience to formulate a regulation, it has elected merely to paraphrase the statutory language.” As Justice Scalia’s concurring opinion stressed, the *Coeur Alaska* majority appeared to be giving deference to the agency’s interpretation of the statute, rather than the regulation.

To the extent that *Coeur Alaska* broadens the deference owed to agencies under *Auer v. Robbins*, it continues a trend begun by the Roberts Court in the 2006 term in *Home Builders* and a case that did not involve environmental law, *Long Island Care at Home, Ltd. v. Coke*. In both of those cases, the Court accorded *Auer* deference to agency interpretations of regulations when the interpretations had changed over time, while the Court’s precedent in *Gonzales v. Oregon* implied that *Auer* deference should not be accorded to agency interpretations that change over time.

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150 Id.
151 Id. (citing *United States v. Mead Corp.*, 533 U.S. 218 (2001)). Justice Scalia wrote that while he would prefer to overrule *Mead*, he was “pleased to join an opinion that effectively ignores it.” *Id.* at 2480.
153 Id.
154 Id.
155 *Coeur Alaska*, 129 S. Ct. at 2479 (Scalia, J., concurring).
Although the Roberts Court has accorded significant deference to agencies in the environmental law cases involving *Chevron* thus far, it is unclear whether the Court will accord the same level of deference to decisions made by agencies under a new presidential administration. Professors Thomas Miles and Cass Sunstein, among others, have suggested that the decisionmaking of Supreme Court Justices and lower federal court judges can be motivated by political ideology.\(^{159}\) Professors Miles and Sunstein reviewed the decisionmaking of Supreme Court Justices and federal appellate court judges in *Chevron* cases (prior to the ascension of Chief Justice Roberts to the Supreme Court) to determine whether application of the test reduced judicial policymaking.\(^{160}\) In theory, the two-step analysis should eliminate systematic differences in decisionmaking among judges along political lines, so that the rate at which judges validate agency actions should be fairly uniform and not correlated to the ideology of the judges.\(^{161}\) However, in reviewing the decisionmaking of Supreme Court Justices, Professors Miles and Sunstein found that the validation rates for Justices varied by almost thirty percentage points across the Justices.\(^{162}\) Justice Breyer validated agency decisions in 81.8% of the *Chevron* cases in the study, while Justice Thomas validated agency decisions in only 52.2% of the cases.\(^{163}\) The divergence identified in Professor Miles and Sunstein’s study is also apparent in the limited sample of *Chevron* cases decided by the Roberts Court, where Justices Ginsburg, Souter, and Stevens only voted to uphold the agencies’ decisions in one of five cases, while Justices Alito, Scalia, Roberts and Thomas voted to uphold the agencies’ decisions in four of five cases.\(^{164}\)

More importantly, at the Supreme Court level, Miles and Sunstein found that political ideology played an important role in decisionmaking.\(^{165}\) Significantly, they concluded that (1) “liberal” Justices\(^{166}\) voted to


\(^{160}\) Miles & Sunstein, *supra* note 159, at 825.

\(^{161}\) See *id.* at 827–28.

\(^{162}\) *Id.* at 831.

\(^{163}\) *Id.*

\(^{164}\) Justices Ginsburg, Souter, and Stevens only voted to uphold an agency’s decision in the *Rapanos* case. Justices Alito, Roberts, Scalia, and Thomas voted to uphold the agency’s decision in *Coeur Alaska*, *Energy, National Ass’n of Home Builders*, and *Massachusetts v. EPA*.


\(^{166}\) *Id.* at 832–33 (identifying Justices Stevens, Souter, Breyer, and Ginsburg as “liberal” Justices in their study, and identifying Justices Scalia and Thomas as “conservative” Justices;
validate agency decisions more often than “conservative” Justices in general;\(^{167}\) (2) the rate at which the Justices validated agency decisions seemed to be significantly influenced by whether the agency interpretation was “liberal” or “conservative;”\(^{168}\) and (3) the rate at which the Justices validated agency decisions seemed to be significantly influenced by the political party of the administration whose decisions were being reviewed.\(^{169}\) Miles and Sunstein concluded that “the most conservative members of the Supreme Court show significantly increased validation of agency interpretations after President Bush succeeded President Clinton . . . .”\(^{170}\) Time will tell whether a change in administration results in a change in deference.

3. Textualism

While the application of *Chevron* and deference to agencies has been contributing to “anti-environment” decisions in the Roberts Court thus far, the same cannot be said for textualism. In contrast to Professor Lin’s observations that the Rehnquist Court, during the 2003 term, appeared to be relying on textualism to interpret environmental statutes against their purposes,\(^{171}\) textualism has not played a central role in the “anti-environment” decisions of the Roberts Court.\(^{172}\)

As noted in the preceding section, in most of the “anti-environment” *Chevron* cases, the Roberts Court has relied on *Chevron* step two

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\(^{167}\) Id. at 823, 826, 832.

\(^{168}\) Id. at 823. Miles and Sunstein labeled decisions as “liberal” or “conservative” for purposes of the study by reference to the identity of the party challenging the decision. Id. at 830. For instance, if an agency decision were challenged by an industry group, Miles and Sunstein labeled the decision as “liberal.” Id.

\(^{169}\) Id. at 823, 827. In analyzing data for this portion of the study, Miles and Sunstein focused on the political party that was in power at the time of the Court’s decision. Id. at 830. While they recognized that the decisions that were being reviewed could have been made, in some cases, by a prior administration, they noted that it was appropriate to identify those cases with the administration in power at the time of the decisions because the new administration could change the agency’s position or change the litigation position after the administration came to power. Id.

\(^{170}\) Id. at 823. While they also noted that “liberal” Justices voted to validate agency decisions less frequently when they reviewed decisions of a republican administration than a democratic administration, the change in the validation rates was much less dramatic than the change in validation rates for the most “conservative” Justices. Id. at 826. Miles and Sunstein noted that “the validation rates of the conservative Justices appear more sensitive to the presidential administration.” Id. at 833.

\(^{171}\) Lin, *supra* note 3, at 568.

\(^{172}\) See *supra* Part II.B.2; *infra* Part III.
rather than an interpretation of the statute according to its plain meaning at step one.\textsuperscript{173} In fact, in only one of the ten cases involving statutory interpretation did the Court adopt a plain meaning interpretation of the statute that was detrimental to the environment.\textsuperscript{174}

It is significant that most of the “anti-environment” decisions have not been based on textualism, because the Supreme Court has limited the discretion of agencies to change their interpretations of statutes after the Court has concluded that the statute is unambiguous.\textsuperscript{175} Thus, if the agencies want to reverse the positions that they have taken in the “anti-environment” cases under a new administration, they would have discretion to do that, so long as the explanation for the change is reasonable.\textsuperscript{176}

While most of the “anti-environment” decisions have not been based on textualism, the Roberts Court has reached many of its “pro environment” decisions through the plain meaning approach. The Court’s textualist approach in \textit{Massachusetts v. EPA} was described in the preceding section.\textsuperscript{177} In addition, in \textit{S.D. Warren v. Maine Board of Environmental Protection}, the majority determined that the ordinary meaning of “discharge,” under the \textit{Webster’s New International Dictionary}, includes releases of water from a dam, so that the operation of the dam triggers the state review and certification procedures of the Clean Water Act.\textsuperscript{178} Similarly, in \textit{United States v. Atlantic Research}, the Court concluded that the plain meaning of section 107 of the Superfund law authorized liable parties to sue other liable parties to recover money that they had spent to clean up hazardous substance spills.\textsuperscript{179}

**III. Revisiting the Critiques of Professors Farber and Lazarus**

Throughout this article, reference has been made to the “environmental law” cases of the Roberts Court. It seems appropriate at this

\textsuperscript{173} \textit{See supra} Part II.B.2.


\textsuperscript{175} \textit{See Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs.}, 545 U.S. 967, 982–83 (2005).


\textsuperscript{177} \textit{See supra} notes 129–31, 141–42 and accompanying text.

\textsuperscript{178} 547 U.S. 370, 375–78 (2005).

time, therefore, to revisit the observations that were made by Professors Farber and Lazarus and inquire whether “environmental law” is becoming a unique area of law in the Roberts Court.

A. Revisiting Professor Farber

In his review of the Supreme Court’s environmental jurisprudence a decade ago, Professor Farber asserted that the Supreme Court had minimized its influence on the development of environmental law in several important ways: (1) by choosing to hear cases that have little precedential value because they involve insignificant issues or have peculiar facts; (2) by dismissing many cases on jurisdictional grounds and avoiding deciding cases on the merits; and (3) by resolving issues on narrow, technical grounds or deferring to agency decisions when the Court addresses the merits in environmental cases. A review of the environmental cases decided during the Roberts era suggests that some change has occurred, but not much.

As in the past, many of the Court’s environmental cases involved peculiar facts or could have limited precedential value. For instance, the Winter Court focused heavily on the importance of military readiness in its opinion, so the decision might be limited to disputes arising in similar contexts in the future. Similarly, the limitation on punitive damages in Exxon Shipping v. Baker could be limited to cases arising under maritime law. At the same time, though, the Court’s decision in Massachusetts v. EPA does not qualify as a case involving peculiar facts with limited precedential value. Likewise, in Burlington Northern and Sante Fe Railway v. United States, the Court addressed some aspects of the CERCLA contribution puzzle, which Farber chastised the Court generally for ignoring.

Regarding the Court’s preference for dismissing cases on jurisdictional grounds, the Court adopted that approach in Summers v. Earth Island Institute, finding that the plaintiffs lacked standing, and in John R. Sand & Gravel v. United States, finding that the statute of limitations barred the plaintiffs’ suit. However, the Court declined an opportu-
nity to dismiss the *Massachusetts v. EPA* case on standing grounds,\(^ {188}\) and most of the environmental cases that were heard by the Roberts Court were decided on the merits.

Regarding the Court’s preference to defer to agencies and to decide cases on narrow, technical grounds, the trend noted by Professor Farber continues in the Roberts Court. As described in the prior section of this Article, the Court has frequently deferred to agencies in environmental cases under *Chevron*.\(^ {189}\) Furthermore, several of the Court’s decisions have been based on narrow, technical grounds. In addition to *Winter* and *Exxon*, which are mentioned above, the Court issued a narrow decision in *United Haulers v. Oneida-Herkimer Solid Waste Management Authority*, likely limiting its reach to cases involving state-created public benefits corporations.\(^ {190}\) Even in *Massachusetts v. EPA*, the Court left open the possibility that EPA could re-examine its decision and determine that it was not appropriate to regulate automobile emissions of carbon dioxide under the Clean Air Act.\(^ {191}\)

**B. Revisiting Professor Lazarus**

As noted above, Professor Lazarus bases his conclusion that the Court has been indifferent, or even hostile, towards environmental law, on a review of the voting patterns of Justices in environmental cases, the identity of Justices writing opinions in environmental cases, and the nature of those opinions. As some evidence of environmental law’s standing with the Court, he noted that the Justice who wrote the greatest number of opinions in environmental cases did not write with an environmental voice or passion and that the Justice who most frequently voted in the majority in environmental cases rarely wrote majority opinions.\(^ {192}\) Similar patterns exist in the Roberts Court. Justice David Souter wrote the most majority opinions in environmental cases during the Roberts term, but his opinions were quite dry and technical, with no environmental rhetoric and little discussion about the purposes or goals of the environmental laws.\(^ {193}\) As in the past, Justice Kennedy continues

\(^{188}\) See 549 U.S. at 526.

\(^{189}\) See supra notes 132–34.

\(^{190}\) See 550 U.S. 330, 334 (2007).

\(^{191}\) See 549 U.S. at 534–35.

\(^{192}\) See supra notes 32–39 and accompanying text.

\(^{193}\) Justice Souter wrote the majority opinion in three cases: *Exxon Shipping Co. v. Baker*, *Environmental Defense v. Duke Energy Corp.*; and *S.D. Warren v. Maine Board of Environmental Protection*. Two of those cases, *Duke Energy* and *S.D. Warren*, were 9–0 rulings. In the third, *Exxon*, the Court ruled 8–0 that punitive damages were available, but split 5–3 on the limits
to vote in the majority in the greatest number of environmental cases, but he has written only one majority opinion out of the fourteen cases. The Justice who voted in favor of the “pro-environment” position most often, Justice Ginsburg, did not author any majority opinions.

While most of the majority opinions in environmental cases continue to lack strong environmental rhetoric or focus on the goals and purposes of environmental law, the Court’s decision in *Massachusetts v. EPA* was an exception and pro- and anti-environmental rhetoric is increasing in several dissenting and concurring opinions. In expanding standing principles for States in *Massachusetts v. EPA*, the majority spoke passionately about the harms that would be caused by emissions of greenhouse gases, including the retreat of glaciers and global sea level rise, the need to regulate motor vehicle emissions of carbon dioxide, and the real risk of “catastrophic harm” that will be caused by such emissions. Counterbalancing the majority opinion, Justice Scalia wrote a strong dissent expressing skepticism about the “asserted” harms caused by greenhouse gases and chiding the majority for adopting a definition of air pollutant broad enough to include “everything airborne, from Frisbees to flatulence.”

Justice Scalia also expressed strong “anti-environment” sentiments in his plurality opinion in *Rapanos v. United States*, describing the U.S. Army Corps of Engineers as “an enlightened despot” and criticizing the Corps for interpreting the Clean Water Act in a manner that Scalia argued authorized regulating “entire cities and immense arid wastelands” as waters of the United States, stretching the term “beyond parody.”

To the extent that an environmental voice emerged in other cases during the Roberts Term, though, it generally appeared in the “anti-environment” cases in dissent. In his dissenting opinion in *National Ass’n of Home Builders v. Defenders of Wildlife*, Justice Stevens spoke about

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194 Kennedy wrote the majority opinion in *Coeur Alaska v. Southeast Alaska Conservation Council*. See infra app. C. While his concurring opinion in *Rapanos* has been very influential in the lower courts, it was not a majority opinion. See infra app. C.
195 See infra app. B.
196 See infra app. C.
197 The U.S. transportation industry alone accounts for more emissions than any other sector of the economy, and U.S. vehicular emissions—considered independently of other sources of greenhouse gas emissions—are outpaced only by the total emissions from China and the European Union. 549 U.S. 497, 524–25 (2007).
198 Id. at 521–26.
199 Id. at 558 n.2 (Scalia, J., dissenting).
the goal of the Endangered Species Act to make species protection the “highest of priorities” without exception and he lamented that the majority’s opinion “whittles away at Congress’ comprehensive effort to protect endangered species from the risk of extinction and fails to give the Act its intended effect.” Towards the end of the opinion, Justice Stevens wrote:

Mindful that judges must always remain faithful to the intent of the legislature, Chief Justice Burger closed his opinion in the “snail darter” case with a reminder that “[o]nce the meaning of an enactment is discerned and its constitutionality determined, the judicial process comes to an end.” Hill, 437 U. S., at 194. This Court offered a definitive interpretation of the Endangered Species Act nearly 30 years ago in that very case. Today the Court turns its back on our decision in Hill and places a great number of endangered species in jeopardy, including the cactus ferrugineus pygmy-owl and Pima pineapple cactus at issue here. At the risk of plagiarizing Chief Justice Burger’s fine opinion, I think it is appropriate to end my opinion just as he did—with a quotation attributed to Sir Thomas More that has as much relevance today as it did three decades ago. This quotation illustrates not only the fundamental character of the rule of law embodied in § 7 of the ESA but also the pernicious consequences of official disobedience of such a rule. Repetition of that literary allusion is especially appropriate today:

“That the law, Roper, the law. I know what’s legal, not what’s right. And I’ll stick to what’s legal. . . . I’m not God. The currents and eddies of right and wrong, which you find such plain-sailing, I can’t navigate, I’m no voyager. But in the thickets of the law, oh there I’m a forester. . . . What would you do? Cut a great road through the law to get after the Devil? . . . And when the last law was down, and the Devil turned round on you—where would you hide, Roper, the laws all being flat? . . . This country’s planted thick with laws from coast to coast—Man’s laws, not God’s—and if you cut them down . . . d’you really think you could stand upright in the winds that would blow then? . . . Yes, I’d give the Devil benefit of law, for my own safety’s sake.” R. Bolt, A Man for All Seasons, Act I,

Justice Ginsburg’s dissenting opinions in Winter v. NRDC and Coeur Alaska v. Southeast Alaska Conservation Council also demonstrate a strong environmental voice. In Coeur Alaska, she wrote at length about the purposes and goals of the Clean Water Act, citing legislative history that suggests that the use of the waters as a waste treatment system is unacceptable, and she chastised the majority for reading the statute to allow polluters to transform waters of the United States into waste disposal facilities. She argued that “[p]roviding an escape hatch for polluters whose discharges contain solid matter . . . is particularly perverse” and criticized EPA for failing to exercise its authority to veto a permit for the fill in the case, which would cause “[d]estruction of nearly all aquatic life in a pristine lake.” In Winter, she wrote about NEPA’s “‘sweeping commitment’ to environmental integrity” and the need to integrate environmental concerns “into the very process of agency decisionmaking” and “into the fabric of agency planning.” In light of the goals of NEPA to afford the public and other agencies with information and an opportunity to comment, she wrote about the need to prepare an EIS at the “earliest possible time” to advance the information and participatory goals of NEPA. She described the harms that would be caused by the Navy’s use of sonar in great detail and argued that the risks “cannot be lightly dismissed, even in the face of an alleged risk to the effectiveness of the Navy’s 14 training exercises.”

Neither Justice Ginsburg’s dissent in Burlington Northern v. United States nor Justice Stevens’s dissent in Entergy Corp. v. Riverkeeper contain passionate rhetoric, but both focus on the goals and purposes of the environmental laws at issue in the case. Other than Justices Ginsburg, Stevens, and Scalia, though, none of the Justices make strong statements in favor of, or opposed to, protection of the environment in their opinions. Justice Breyer repeatedly writes concurring and dissent-
ing opinions to clarify administrative law issues, suggesting that he probably views environmental law simply as administrative law that arises in disputes involving the environment.\footnote{See, e.g., Coeur Alaska, 129 S. Ct. at 2477 (Breyer, J., concurring) (stressing that courts should defer to an agency’s reasonable interpretation of a statute even though it may not represent the best overall environmental result); Entergy Corp. v. Riverkeeper, 129 S. Ct. 1498, 1515 (2009) (Breyer, J., concurring and dissenting) (noting that if the EPA changed its longstanding policy regarding consideration of costs in setting technology-based standards for cooling water intake structures, it must adequately explain the basis for the change); Nat’l Ass’n of Homebuilders v. Defenders of Wildlife, 551 U.S. 644, 698 (2007) (Breyer, J., dissenting) (writing separately to note that grants of discretionary authority to agencies come with implied limits, but also to note that section 7(a)(2) of the Endangered Species Act might not apply to some unrelated agencies’ actions).}

In addition to reviewing the nature of the opinions written by Supreme Court Justices, Professor Lazarus examined the voting records of the Justices in an attempt to determine whether any of the Justices appeared to be influenced, in their decisionmaking, by the environmental nature of a case.\footnote{See supra notes 42–46 and accompanying text.} A review of the voting patterns of Justices in the Roberts Court in the environmental cases suggests that several Justices may be influenced by the environmental nature of the cases and that the Court may be becoming even more polarized on those issues than in the past.\footnote{See infra app. D.}

First, it is interesting to note that Justice Stevens and Ginsburg vote in the majority on environmental cases far less frequently than they vote in the majority in other cases decided during the Roberts era.\footnote{See infra app. D.} While Justice Ginsburg has voted in the majority between sixty-nine and seventy-five percent of the time in all cases, she has voted in the majority only forty-three percent of the time in environmental cases.\footnote{See infra app. D.} Similarly, while Justice Stevens has voted in the majority between sixty-four and seventy-five percent of the time in all cases, he has also voted in the majority only forty-three percent of the time in environmental cases.\footnote{See infra app. D.}

At the other end of the scale, Justices Thomas and Scalia voted in the majority in environmental cases decided during the Roberts era more frequently than they vote in the majority in other cases.\footnote{See infra app. D.}

Following up on the system created by Professor Lazarus,\footnote{See supra notes 42–46 and accompanying text.} if the Justices are assigned EP scores for their voting records on environmental cases decided during the Roberts era, it appears that many of...
the Justices are influenced by the environmental nature of cases, as most of the Justices have scores that are higher than sixty-six percent or lower than thirty-three percent.\textsuperscript{219} The numbers at which Professor Lazarus suggested a fair case could be made that the environmental dimension of the case influenced their decision.\textsuperscript{220} On the pro-environment side, four Justices, Ginsburg (93%), Souter (86%), Breyer (71%) and Stevens (71%) have pro-environment scores that are higher than 66%.\textsuperscript{221} The other five Justices, Alito (31%), Kennedy (36%), Roberts (36%), Scalia (36%), and Thomas (36%) all have scores close to thirty-three percent.\textsuperscript{222} The scores also suggest that the Court may be becoming more polarized on environmental issues during the Roberts era. While there were no Justices with a score over sixty-six percent in Lazarus’ study through the 1999 Term of the Supreme Court,\textsuperscript{223} four Justices have scores over sixty-six percent during the Roberts era.\textsuperscript{224} While there were four Justices with scores of thirty-three percent or lower in Lazarus’ study,\textsuperscript{225} the remaining five Justices all have scores below or near thirty-three percent.\textsuperscript{226}

On the whole, therefore, most of the criticisms that Professor Lazarus leveled at the Supreme Court prior to the appointment of Chief Justice Roberts can be raised with similar force to the environmental decisionmaking of the Roberts Court. The final section of this article briefly explores whether a recent change in the composition of the Court is likely to have any impact on the Court’s treatment of environmental law.

IV. REPLACING JUSTICE SOUTER

While the composition of the Court had not changed since the appointment of Justice Alito during the first term of the Roberts Court, Justice David Souter retired at the conclusion of the October 2008
Term. On May 26, 2009, President Obama nominated Judge Sonia Sotomayor, a judge on the United States Court of Appeals for the Second Circuit, to replace Justice Souter on the Court. Judge Sotomayor has received the support of environmental groups, but her appointment will probably not significantly change the Roberts Court’s approach toward environmental cases.

Even if she ultimately votes in favor of “pro-environment” positions in environmental cases, she will merely be replacing another Justice who voted consistently in favor of “pro-environment” positions. Justice Souter’s EP scores in Professor Lazarus’ study and during the terms of the Roberts’ Court are among the highest on the Court and he wrote the most majority opinions in environmental cases during the Roberts Court’s first four terms. He was also a frequent dissenter in the Court’s “anti-environment” decisions.

Although Judge Sotomayor’s appointment may not significantly change the nature of the Roberts Court’s treatment of environmental law, the limited data that is available suggest that she may be a strong environmental voice on the Court. While she has written very few opinions in environmental cases on the Second Circuit, she authored that court’s opinion in the Riverkeeper, Inc. v. EPA case that was reversed by the Supreme Court. Applying Chevron, her opinion concluded, at step one, that the Clean Water Act did not authorize EPA to consider cost-benefit analysis in setting pollution standards for cooling water intake structures. Significantly, the analysis focused on the purposes of the statute and legislative history to clarify the language of the statute and did not adopt a textualist approach. Ultimately, though, the

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230 Lazarus, supra note 1, at 812 app. D.
231 See infra app. B.
232 See infra app. C.
234 475 F.3d 83 (2nd Cir. 2007), rev’d sub nom. Entergy Corp. 129 S. Ct. at 1498.
235 Id. at 98–99.
236 Id. at 97–101.
court concluded, at *Chevron* step two, that it was not possible to determine whether EPA had used cost-benefit analysis in setting the standards, so the court remanded to the agency to explain the manner in which it considered cost in setting the standards.\(^{237}\)

She also joined in another decision in the Second Circuit where the court focused on legislative history and statutory purposes, rather than textualism, to interpret a statute to protect the environment. In *NRDC v. Abraham*, the court overturned the Department of Energy’s efforts to weaken energy efficiency standards for air conditioning units.\(^{238}\) Applying *Chevron*, the court concluded at step one that it was clear, based on the legislative history and purpose of the Energy Policy and Conservation Act, that the agency did not have the authority under the statute to revoke energy efficiency standards that had been published as final standards, even though the attempted revocation preceded the “effective date” of the standards.\(^{239}\)

On the “anti-environment” side of the ledger, Judge Sotomayor was part of a panel that rejected an environmental group’s challenge to EPA’s approval of New York’s plan for meeting the agency’s air quality standard for ozone in *Environmental Defense v. EPA*.\(^{240}\) Even in that case, though, the court examined the legislative history and purpose of the Clean Air Act to determine whether the agency’s decision complied with the statute.\(^{241}\) The court determined, at *Chevron* step one, that the statute was ambiguous regarding whether the scientific modeling used by New York was appropriate, and the Court concluded at step two that the agency’s interpretation of the statute to authorize the modeling used by New York was reasonable.\(^{242}\) The court stressed that in “examining this kind of scientific determination, as opposed to simple findings of fact, a reviewing court must generally be at its most deferential.”\(^{243}\) Federalism considerations also seem to have motivated the court in this case, as the court emphasized that “the primary responsibility for meeting these [air quality] standards rests with the states” and that “states have considerable leeway in selecting the particular meth-

\(^{237}\) Id. at 102–05.  
\(^{238}\) 355 F.3d 179, 206 (2nd Cir. 2004).  
\(^{239}\) Id. at 195–97.  
\(^{240}\) 369 F.3d 193, 210–12 (2nd Cir. 2004).  
\(^{241}\) Id. at 196–98.  
\(^{242}\) Id. at 203–05.  
\(^{243}\) Id. at 204 (quoting Baltimore Gas & Elec. Co., v. NRDC, 462 U.S. 87, 103 (1983)).
ods and programs they will use to achieve compliance with the national standards.”

Just as federalism considerations may have influenced the Second Circuit in the *Environmental Defense* case, federalism considerations influenced that court in another decision that Judge Sotomayor joined that rejected challenges brought by environmental plaintiffs. In *Burnette v. Carothers*, the court upheld the dismissal of citizen suits brought against Connecticut State officials under the Clean Water Act, the Resource Conservation and Recovery Act, and the Comprehensive Environmental Response Compensation and Liability Act, on the grounds that the claims were barred by the Eleventh Amendment immunity for States.

Thus, Judge Sotomayor’s record in environmental cases seems generally positive and her votes against environmental groups have frequently been motivated by federalism considerations. While the opinions she has written or joined lack environmental rhetoric, they focus on legislative history and statutory purposes, rather than textualism, and are generally pro-environment, suggesting that her voting pattern on the Supreme Court may more closely follow Justices Ginsburg and Stevens than Justices Scalia and Thomas.

**Conclusion**

While environmental law issues were a major focus of the Supreme Court during the October 2008 Term, very few environmental cases are on the Court’s docket for the current term. Accordingly, it may take time to assess Justice Sotomayor’s influence on the development of “environmental law” and on the outcome of environmental cases. Nevertheless, even if she were to become a strong environmental voice on the Court, it will likely have little effect on the treatment of environmental law by the Roberts Court. Although it is difficult to draw firm conclusions based on the small number of environmental law cases decided by the Roberts Court thus far, the Court’s decisions, on the whole, have generally been more harmful than beneficial to the envi-

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244 Id. at 197.
245 192 F.3d 52, 55 (2nd Cir. 1999).
246 The only case added to the Court’s docket for the October 2009 Term, at this time, is *Stop the Beach Renourishment, Inc., v. Florida Department of Environmental Protection*, a case that involves littoral rights and takings. The Oyez Project, Stop the Beach Renourishment Inc. v. Florida Department of Environmental Protection, http://oyez.org/cases/2000-2009/2009/2009_08_1151 (last visited May 14, 2010).
While the Roberts Court has not been overtly hostile to the environment, it appears that a majority of the Justices are negatively motivated by the environmental nature of those cases, and that balance has not shifted with Justice Sotomayor’s replacement of Justice Souter. Like its predecessors, the Roberts Court has not generally treated “environmental law” as a separate area of law. Based on the current composition of the Court, though, that could be a good thing for the environment.

247 See supra notes 92–113 and accompanying text.
248 See infra app. B.
### APPENDIX A: ENVIRONMENTAL CASES DECIDED DURING THE OCTOBER 2005–2008 TERMS

<table>
<thead>
<tr>
<th>Case</th>
<th>Major Issue</th>
<th>Affirm/Reverse</th>
<th>Pro-Environment</th>
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<thead>
<tr>
<th>Case</th>
<th>Issue</th>
<th>Outcome of Appeal</th>
<th>Result</th>
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<tbody>
<tr>
<td>National Association of Home Builders v. Defenders of Wildlife,</td>
<td>Statutory Interpretation</td>
<td>Reversed 9th Circuit</td>
<td>No</td>
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<tr>
<td>United Haulers Association v. Oneida-Herkimer Solid Waste Management Authority, 550 U.S. 330 (2007).</td>
<td>Commerce Clause</td>
<td>Affirmed 2d Circuit</td>
<td>Yes</td>
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### Appendix B: Justices’ Pro-Environment and Pro-Government Votes and Scores

<table>
<thead>
<tr>
<th>Justice</th>
<th>Pro-environment Votes</th>
<th>Pro-Environment</th>
<th>Pro-Government Votes</th>
<th>Pro-Government</th>
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</thead>
<tbody>
<tr>
<td>Alito</td>
<td>4 - Atlantic Research; S.D. Warren; John R. Sand &amp; Gravel; Duke Energy</td>
<td>31% (did not participate in Exxon)</td>
<td>9 - Winter; Summers; Entergy; Coeur Alaska; John R. Sand &amp; Gravel; Mass. v. EPA; NAHB; Duke Energy; S.D. Warren</td>
<td>69%</td>
</tr>
<tr>
<td>Breyer</td>
<td>10 - Winter; Summers; Mass. v. EPA; NAHB; Duke Energy; Atlantic Research; United Haulers; Rapanos; S.D. Warren; John R. Sand &amp; Gravel</td>
<td>71%</td>
<td>7 - Entergy; Coeur Alaska; John R. Sand &amp; Gravel; Duke Energy; United Haulers; Rapanos; S.D. Warren</td>
<td>54%</td>
</tr>
<tr>
<td>Ginsburg</td>
<td>13 - Winter; Summers;</td>
<td>93%</td>
<td>5 - Burlington Northern;</td>
<td>38%</td>
</tr>
<tr>
<td></td>
<td>Entergy; Burlington Northern; Coeur Alaska; Mass. v. EPA; NAHB; Duke Energy; Atlantic Research; United Haulers; Rapanos; S.D. Warren; Exxon</td>
<td>Duke Energy; United Haulers; Rapanos; S.D. Warren</td>
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<tr>
<td>Kennedy</td>
<td>5 - Mass. v. EPA; Duke Energy; Atlantic Research; S.D. Warren; John R. Sand &amp; Gravel</td>
<td>36%</td>
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<tr>
<td></td>
<td></td>
<td>8 - Winter; Summers; Entergy; Coeur Alaska; John R. Sand &amp; Gravel; NAHB; Duke Energy; S.D. Warren</td>
<td>62%</td>
<td></td>
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</tbody>
</table>
### Appendix B: Justices’ Pro-Environment and Pro-Government Votes and Scores (Continued)

<table>
<thead>
<tr>
<th>Justice</th>
<th>Pro-Environment Votes</th>
<th>Pro-Environment</th>
<th>Pro-Government Votes</th>
<th>Pro-Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roberts</td>
<td>5 - Duke Energy; Atlantic Research; United Haulers; S.D. Warren; John R. Sand &amp; Gravel</td>
<td>36%</td>
<td>10 - Winter; Summers; Entergy; Coeur Alaska; John R. Sand &amp; Gravel; Mass. v. EPA; NAHB; Duke Energy; United Haulers; S.D. Warren</td>
<td>77%</td>
</tr>
<tr>
<td>Scalia</td>
<td>5 - Duke Energy; Atlantic Research; United Haulers; S.D. Warren; John R. Sand &amp; Gravel</td>
<td>36%</td>
<td>10 - Winter; Summers; Entergy; Coeur Alaska; John R. Sand &amp; Gravel; Mass. v. EPA; NAHB; Duke Energy; United Haulers; S.D. Warren</td>
<td>77%</td>
</tr>
<tr>
<td>Souter</td>
<td>12 - Winter;</td>
<td>86%</td>
<td>5 - John R. Sand &amp; Gravel</td>
<td>38%</td>
</tr>
<tr>
<td>Stevens</td>
<td>10 - Summers; Entergy; Coeur Alaska; Mass. v. EPA; NAHB; Duke Energy; Atlantic Research; United Haulers; Rapanos; S.D. Warren; Exxon</td>
<td>71%</td>
<td>3 - Winter; Duke Energy; Rapanos; S.D. Warren</td>
<td>23%</td>
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<tr>
<td>Thomas</td>
<td>5 - Duke Energy; Atlantic Research; United Haulers; S.D. Warren; John R. Sand &amp; Gravel</td>
<td>36%</td>
<td>10 - Winter; Summers; Entergy; Coeur Alaska; John R. Sand &amp; Gravel; Mass. v. EPA; NAHB; Duke Energy; United Haulers; S.D. Warren</td>
<td>77%</td>
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</table>
## Appendix C: Environmental Opinions by Justice

<table>
<thead>
<tr>
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### Appendix D: Justices’ Frequency in the Majority in Environmental Cases as Compared to All Types of Cases for the October 2005–2008 Terms

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ANYTHING BUT A BREEZE: MOVING FORWARD WITHOUT NFIP WIND COVERAGE

Michael A. Brown*

Abstract: The storm season of 2005, with the indelible images of Hurricane Katrina stuck in our minds forever, left much of the Gulf Coast devastated. The aftermath of the storm also caused serious damage to the National Flood Insurance Program (NFIP or the Program), which provides federally subsidized flood insurance to communities participating in the Program. Following the storms of 2005, many home and building owners and insurance companies began to disagree about the terms of their agreements and the cause of damage upon these structures. The main point of dispute was whether damage could be attributed strictly to flooding, to wind, or to a combination of both. In an effort to eliminate similar disputes and to enhance the ability for home and business owners to obtain relief for their losses, lawmakers have proposed including wind coverage within the NFIP. This Note will examine the NFIP and the idea of adding multiple peril coverage to the Program. This Note will attempt to explain why adding wind coverage to the NFIP will only further exacerbate the problems for an already fiscally irresponsible program.

Introduction

The hurricane season of 2005 produced unprecedented losses in the private insurance industry and the National Flood Insurance Program (NFIP or the Program). The most severe losses incurred in 2005, as evidenced by the graphic images in the aftermath of Hurricane Katrina, took the form of human casualties and community destruction. While flooding—the most costly natural catastrophe in the United States—played a leading role in the devastation experienced in New


Orleans and the other Gulf Coast communities, it was not the only source of damage.³ Hurricanes are multiperil events, eliciting damage through both flooding and wind.⁴

Following the 2005 storm season, significant disputes arose regarding victims’ insurance coverage because wind and flooding damage are generally covered under different policies.⁵ For reasons discussed in this Note, the majority of homeowners insurance policies do not cover flood losses.⁶ Instead, flood losses are covered through the NFIP, established in 1968 under the National Flood Insurance Act.⁷ Many blamed post-storm disputes on the private insurance market, claiming that private insurance companies exploited government oversight to manipulate insurance adjustments at the expense of policy holders and the Federal Program.⁸

In an effort to create an option in the NFIP to offer both wind and flood coverage, the Multiple Peril Insurance Act of 2007 was introduced; it was approved by the House of Representatives and Senate as part of the Flood Insurance Reform and Modernization Act.⁹ The Act was aimed at restoring the financial solvency of the NFIP while providing insurance for both flood and wind damage.¹⁰

This Note examines the NFIP and argues against the addition of wind coverage to the Program. Part I analyzes the history of the NFIP.¹¹ Part II explores the Gulf Coast’s flood history, paying particularly close attention to Hurricane Katrina.¹² Part III will evaluate the financial turmoil the NFIP has experienced since Hurricane Katrina.¹³ Part IV

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⁷ H.R. 3121, 110th Cong. (2007); Taylor, supra note 8, at 790.
⁸ See infra Part II.
⁹ See infra Part III.
¹⁰ See infra Part IV. See generally GREATER TRANSPARENCY NEEDED, supra note 1 (discussing problems and making recommendations for the NFIP in the aftermath of Hurricane Katrina).
will dissect the potential results of adding wind coverage to the NFIP, concluding that a program including wind coverage will be unable to sustain additional liability.  

I. National Flood Insurance Program

A. National Flood Insurance Act of 1968

Congressional interest in flood relief began in the late 1800s as a number of floods produced human and economic losses along the Mississippi River basin. The federal government employed structural measures to control flooding in response to prior disasters. However, physical and economic losses piled up under the Flood Control Act of 1936 even after the implementation of levees and barriers designed to protect at-risk citizens from the dangers of flooding. In the early 1960s, Hurricanes Donna, Carla, and Betsy illustrated the need for additional federal help. Through the Southeast Hurricane Disaster Relief Act of 1965, the U.S. Department of Housing and Urban Development provided a report to Congress illustrating the financial burdens of flood disasters and the need for flood insurance.

Responding to report recommendations, Congress passed the National Flood Insurance Act of 1968, enabling the National Flood Insurance Program (NFIP or the Program), with three primary purposes in mind. First, the Program would identify and map flood-prone communities. Second, the Program would require community adoption and enforcement of floodplain management regulations. Lastly, the Program would provide federally subsidized flood insurance to communities who participated in the Program.

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14 See infra Part IV.A.1.
17 Id.
18 Houck, supra note 3, at 68.
19 Id. at 68–69.
22 Id.
23 See id.
The Program, directed by the Federal Emergency Management Agency (FEMA), requires the Director of FEMA to identify and map at-risk communities and also establish flood-risk zones.\textsuperscript{24} The culmination of this study is the Flood Insurance Rate Map (FIRM).\textsuperscript{25} Since the NFIP is a voluntary program, a community must apply to be identified and mapped according to the procedures followed by FEMA.\textsuperscript{26} There are a number of pieces within the NFIP, including the emergency program, regular program, and the “Write Your Own” program.\textsuperscript{27}

1. Emergency Program

The NFIP emergency program provides a first layer amount of insurance on all insurable structures before the effective date of a community’s initial FIRM.\textsuperscript{28} The emergency program was established to deal with delays between the completion of a risk study and a community’s insurance eligibility.\textsuperscript{29} The main element of the FIRM that guides communities is the base flood elevation (BFE), which requires buildings be elevated or flood-proofed to the appropriate level as indicated on the FIRM.\textsuperscript{30} The FIRM also illustrates areas that fall within a “100-year flood” boundary, named the Special Flood Hazard Area (SFHA).\textsuperscript{31} A community is not responsible for adhering to NFIP’s minimum floodplain requirements while part of the emergency program since its risk study is not complete.\textsuperscript{32} However, a community must adopt adequate floodplain management regulations to become part of the NFIP regular program.\textsuperscript{33} The goal of the emergency program is to promote entrance into the NFIP while allowing communities time to meet application requirements, which includes producing a Flood Hazard Boundary Map.\textsuperscript{34}

\textsuperscript{24} Id. As of August 1, 2002, 19,200 communities had been issued Flood hazard maps. The total cost of this map production was over $1.5 billion. Id.
\textsuperscript{25} Houck, \textit{supra} note 3, at 76.
\textsuperscript{26} \textit{See} NFIP, \textit{supra} note 16, at 12; \textit{see also} Houck, \textit{supra} note 3, at 73.
\textsuperscript{28} 44 C.F.R. § 59.1 (2009).
\textsuperscript{29} \textit{See} id.
\textsuperscript{30} Houck, \textit{supra} note 3, at 76–77.
\textsuperscript{31} 44 C.F.R. § 59.1; King, \textit{supra} note 15, at 7. The definition falls under the title of “area of special flood hazard.” 44 C.F.R. § 59.1.
\textsuperscript{32} King, \textit{supra} note 15, at 9.
\textsuperscript{33} Id.; \textit{see} 44 C.F.R. § 59.3.
\textsuperscript{34} \textit{See} Beth Davidson, \textit{How Quickly We Forget: The National Flood Insurance Program and Floodplain Development in Missouri}, 19 Wash. U. J.L. & Pol’y 365, 371 (2005). Communities have one year to complete the application process. Id.
2. Regular Program

A community becomes part of the regular program when a FIRM has been completed and the community has adopted the NFIP’s minimum floodplain management regulations consistent with federal criteria.\(^{35}\) At the minimum level, which occurs when the program Administrator has not yet defined the SFHA’s, a community is responsible for requiring permits for all construction or development within the community to determine if the development will occur in flood-prone areas.\(^ {36}\) The community is required to further mitigate flood-loss risks through review of permit applications and proposed development.\(^ {37}\) Once a community becomes part of the regular program, the Director of the NFIP is statutorily required to make insurance available to interested residents within the community.\(^ {38}\) In the regular program, additional flood insurance is available based upon actuarial determinations reflecting the probability of flood damages.\(^ {39}\)

While the NFIP had promising goals, it got off to a slow start because of waning community participation.\(^ {40}\) Because only 100,000 policyholders had signed on by 1972, Congress decided that greater efforts to promote the Program were needed.\(^ {41}\) The effort came in the form of the National Flood Disaster Protection Act (NFDPA) of 1973, which made the purchase of flood insurance mandatory for the protection of SFHA properties.\(^ {42}\) Participation in the NFIP skyrocketed following the passage of the NFDPA.\(^ {43}\) Congress passed the National Flood Insurance Reform Act (NFIA) of 1994 to continue the growth of the NFIP.\(^ {44}\)

\(^{35}\) 44 C.F.R. § 59.2(b).
\(^{36}\) Id. § 60.3(a)(3).
\(^{37}\) Id.
\(^{39}\) King, supra note 15, at 9.
\(^{40}\) See Houck, supra note 3, at 70.
\(^{41}\) Id.
\(^{43}\) See Davidson, supra note 34, at 368–69. By January 31, 1983, over 2 million policies had been issued through the NFIP. Houck, supra note 3, at 72.
\(^{44}\) Pub. L. No. 103-325, 108 Stat. 2255 (codified as amended at 42 U.S.C. § 4001). States have also begun to address issues of flood coverage by selling insurance in high-risk areas, such as the “Wind Pool” in Mississippi. See Natural Catastrophe Insurance, supra note 3, at 1; Taylor, supra note 8, at 788–89.
B. Write Your Own Program

In the passage of the NFIA, Congress made clear that there were factors that had restricted the private insurance industry from entering into flood insurance. However, Congress believed that the federal government working side-by-side with private insurers could produce a successful flood insurance industry.

The program that Congress had envisioned evolved in 1983 to become the “Write Your Own” (WYO) program. Under the WYO program, private insurance companies issue policies and settle claims under their own names, but these policies fall under the umbrella of the NFIP. WYO insurers must abide by the NFIP’s Write Your Own Program Financial Control Plan Requirements and Procedures manual, monthly transaction reporting requirements, as well as complete reviews for operations every three years. Buyers of insurance can either buy through the WYO program, or through the federal government itself in the NFIP “direct” program. According to a report from the Department of Homeland Security, approximately ninety-eight percent of flood policies were written by WYO insurers.

There was fear that WYO insurers would blame damage on flooding, which is covered by the NFIP, rather than wind, which is covered by homeowner policies. The main characteristic that separates the WYO program from the direct program is that the insurers are from the private industry, meaning that they are most likely also providing homeowners insurance, which does not include flood insurance coverage. Since homeowner policies almost always cover wind damages, but exclude flood damages, there seems to be a potential conflict of interest for any WYO insurer who also provides homeowners insurance.

As will be expanded on in Part II, the Office of Inspector General (OIG) conducted a study to investigate whether, and to what extent, insurance companies participating in the WYO program improperly attributed damages from homeowner policies or wind insurance

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46 Id. § 4001(b)(2).
48 See id. at 23.
49 King, supra note 15, at 10–11.
50 See Wind vs. Flood, supra note 5, at 3.
51 Id. at 4.
52 Id. at 1.
53 See id. at 3.
54 Id. at 12.
The OIG found no evidence of WYO insurers attributing more damage to flooding rather than to wind following Hurricane Katrina despite popular perception to the contrary. While sixty-six percent of the claims filed in the study had the same insurer providing the flood and homeowner policies, most of these claims utilized a different adjuster—the person who determines the cause and extent of damage after a storm—for each policy which reduced the opportunity for a conflict of interest from occurring.

C. The Standard Flood Insurance Policy and Flood Insurance Rates

The Standard Flood Insurance Policy (SFIP) describes the terms of the agreement between a purchaser of insurance and FEMA or a WYO insurer. The SFIP comes in three forms—the Dwelling Form, the General Property Form, and the Residential Condominium Building Association Policy Form—with the three forms designed to cover all possible occupancies. Most notably, the SFIP defines a flood as:

A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties (at least one of which is your property) from: a. Overflow of inland or tidal waters; b. Unusual and rapid accumulation or runoff of surface waters from any source; c. Mudflow.

If a flood damages an occupancy that is insured under the SFIP, there are maximum amounts of coverage available to the property victim. A residential family unit building or condominium is eligible to receive up to $250,000 in building coverage and $100,000 in personal property coverage. For non-residential buildings, insurance payouts can be as high as $500,000 in building coverage and $500,000 in personal property.

55 Id.
56 Wind vs. Flood, supra note 5, at 5.
57 Id. at 12.
58 NFIP, supra note 16, at 23.
59 Id.
61 NFIP, supra note 16, at 25.
62 Id.
63 Id.
Before the NFIP can provide relief for flood damage victims, the Program must first receive premiums from insurance holders.64 Occupants must pay either the actuarial rates established under the SFIP or pay “subsidized” rates.65 “Pre-FIRM” buildings, which were built before a community’s application or entrance into the NFIP, receive subsidized rates as authorized by Congress.66 Since many pre-FIRM buildings were built well in advance of NFIA’s passage in 1968, Congress believed that the buildings were built without actual knowledge of the extent of flood risk; therefore, the buildings’ owners should not have to pay the actuarial premium.67 Further, it was evident that for many pre-FIRM buildings, the majority of a family’s assets were invested in the home itself, leaving little to pay the actuarial rate when a storm caused severe damage.68 The NFIP viewed subsidies as a tool to persuade more communities to join the Program, and with entrance, encourage more prudent land use decisions from the communities as they follow flood maps and other mitigation measures.69 Subsidized rates are paid at an estimated thirty-five to forty percent of what the actuarial rate will be for buildings with risk of flooding.70

Congress did not intend for the Pre-FIRM subsidies to last forever.71 If a pre-FIRM structure is substantially improved, there is a requirement under the NFIP that it meet current construction and building code standards.72 The NFIP envisions a scenario in which subsidized rates will be phased out over time.73 That vision has come to fruition.74 At the beginning of the Program, seventy percent of the issued policies were subsidized, compared to roughly twenty-eight percent of the policies in 2007.75

To make up for the losses incurred on subsidized premiums, the NFIP sets a premium level paid by NFIP participants that establishes the

64 See generally King, supra note 15, at 14 (explaining the differences in rates and subsidies offered under the NFIP).
65 Id.
66 Id.
68 King, supra note 15, at 14.
69 See id.
71 See King, supra note 15, at 15.
72 44 C.F.R. § 60.3 (2009).
74 See id.
75 Id.
“average historical loss year.” 76 FEMA must determine the needed revenue to meet the average historical loss year based upon the number of policies outstanding and the expected losses and program expenses. 77

For buildings that are considered post-FIRM, or built after a community’s entrance into the NFIP, actuarial rates are applied to the structures to reflect risks of building in flood-prone areas. 78 The actuarial rates rely on the flood-risk zone that a building is built in, such as an SFHA. 79 Other factors in deciding the actuarial rate include the height of the lowest floor above or below the Base Flood Elevation (BFE), the type of building, and the size of the building. 80 The most important of these factors is the zone in which the building is to be built since FEMA bases flood rates for post-FIRM structures on their exposure to damage, and the FIRM is designed to estimate flood damage. 81 For instance, a building that is to be erected in “Zone A” on a FIRM has a one percent annual flood risk and a twenty-six percent risk of flooding over the course of a thirty-year mortgage. 82 A property owner is required to purchase flood insurance in order to obtain a loan from a federally regulated lender if their property is located in “Zone A,” which is found in a high-risk area, or an SFHA. 83

D. Repetitive Loss Problem

“Repetitive Loss Properties” (RLP) have been one of FEMA’s largest challenges in its management of the NFIP. 84 A repetitive loss property is defined as any insurable building that has incurred at least two claims of $1000 or more from the NFIP within any ten-year rolling period since 1978. 85 RLPs are a major financial strain on the NFIP. 86 According to a 2005 study, while only one percent of NFIP policies are RLPs, these one percent of polices account for an average of thirty per-

76 King, supra note 15, at 7.
77 Id. at 15.
78 NFIP, supra note 16, at 27.
79 See id.
80 Id.
81 See id.
83 Id.
84 See King, supra note 15, at 5.
86 Id.
cent of the total claim payouts.\textsuperscript{87} Since RLPs are such a small percentage of the Program, yet require such a large percentage of payouts, they have increased NFIP’s annual losses and have made it increasingly challenging for the Program to properly allocate resources to prepare for future flood mitigation efforts.\textsuperscript{88} To date, the NFIP stands $17.3 billion in debt to the U.S. Treasury.\textsuperscript{89}

To deal with the difficulties presented by RLPs, President George W. Bush signed the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004.\textsuperscript{90} The Act reauthorized the NFIP through September 2008\textsuperscript{91} and was aimed at reducing losses to properties for which repetitive flood insurance claim payments have been made.\textsuperscript{92} Congress found that the vast majority of RLPs are pre-FIRM buildings, meaning that they are subsidized under the NFIP, which further exacerbates the discrepancy between premiums paid and payouts incurred on behalf of the Program.\textsuperscript{93}

A prominent attribute of the 2004 Act is a pilot program that aims at mitigating the damages of RLPs.\textsuperscript{94} Money is transferred from the National Flood Insurance Fund to the National Flood Mitigation Fund, which provides these funds to state and local governments in exchange for RLP mitigation efforts.\textsuperscript{95} While the mitigation efforts vary depending on the individual circumstances of an RLP, some of the strategies employed include removing buildings from SFHAs, elevating buildings above the BFE for the given area, or local drainage improvement that complies with the standards of NFIP.\textsuperscript{96} The 2004 Act requires that if a property owner refuses an offer of flood mitigation, his or her insurance premium will be raised to 150% of the chargeable rate.\textsuperscript{97}

\textsuperscript{87} King, \textit{supra} note 15, at 5.

\textsuperscript{88} Id. at 20. RLPs are part of the “adverse selection” problem, where policyholders are centralized in a high-risk area, leaving the insurer unable to spread its losses. See \textit{id.} at 23–24.


\textsuperscript{91} King, \textit{supra} note 15, at 29.


\textsuperscript{94} King, \textit{supra} note 15, at 29.

\textsuperscript{95} Id. at 30.

\textsuperscript{96} FEMA, Answers to Questions About the NFIP, http://www.fema.gov/business/nfip/replps.shtm (last visited May 14, 2010).

\textsuperscript{97} King, \textit{supra} note 15, at 31.
ever, at no time can the premium reach a level that exceeds the actuarial rate of the property.98

II. GULF COAST HISTORY

A. Geography

The Gulf Coast presents great economic and ecologic value to the United States.99 Economically, nearly thirty-four percent of the U.S. natural gas supply and over twenty-nine percent of the nation’s crude oil supply move through Louisiana.100 The Gulf Coast region also produced the largest commercial fish and shellfish landings in the continental United States during 2003–2004.101 Ecologically, the coastline provides habitat for birds migrating from North America to South America.102 The coast also provides essential marshlands and barrier islands which buffer communities from winds and floods.103

The easy access of the Gulf Coast is also the region’s largest vulnerability.104 For example, New Orleans develops around the curve of the Mississippi River and is bordered by Lake Pontchartrain and Lake Borgne, which opens to the Gulf of Mexico.105 The threats of New Orleans’ surrounding waters are exacerbated by the fact that the city is sinking.106 Deposition of sediments provided by the Mississippi historically counter the subsidence of New Orleans’ marsh.107 However, due to man-made facilities such as levees, sediments from the Mississippi are not gathering in New Orleans and the lack of replenishment for the natural subsidence is causing the city to fall farther below sea level.108

98 Id.
100 Id.
101 Id.
102 Id.
103 Id.
104 See id. at 3. The Gulf Coast is vulnerable in large part because of the transformation of wetlands to open water because of subsidence, sea-level rise, and erosion, all of which have been amplified or accelerated by human processes such as gas and oil extraction and channelization and leveeing of rivers. Id.
106 Id. at 8.
107 See id.
108 Id.
B. Flood Control Projects

In 1965, soon after Hurricane Betsy hit the Gulf Coast, Congress authorized the construction of the Lake Pontchartrain and Vicinity Louisiana Hurricane Protection Project in the Flood Control Act of 1965.\(^{109}\) The project, designed to protect areas of Louisiana surrounding Lake Pontchartrain from hurricanes, was a joint federal, state, and local effort with all parties contributing funds to cover the effort’s costs.\(^{110}\) The Army Corps of Engineers (the Corps) was responsible for the flood control systems employed through the project, most notably the levees surrounding the New Orleans region.\(^{111}\)

The Corps had the choice of two plans to implement in the Lake Pontchartrain area.\(^{112}\) The first plan, referred to as the “barrier plan,” was originally chosen to be implemented since it was considered the cheaper project and was projected as the quicker of the projects to complete.\(^{113}\) However, many environmentalists were opposed to the barrier project, including Save Our Wetlands, a group that was able to procure an injunction against the Corps from constructing barrier projects.\(^{114}\) Soon thereafter, the Corps decided to proceed with their second option, the “high level” plan, because it was less costly than the barrier plan and would be more acceptable for the surrounding environment.\(^{115}\) Regardless of the decision-making process, the Corps was unsuccessful in their design of the levee system that surrounded the New Orleans area.\(^{116}\)

C. Hurricane Katrina

Hurricanes Dennis, Rita, and Wilma caused significant damage to the Gulf Coast during the 2005 storm season;\(^{117}\) however, none of these storms compared to the devastation caused by Hurricane Katrina.\(^{118}\)


\(^{110}\) Id.

\(^{111}\) Id.

\(^{112}\) See id. at 2–3.

\(^{113}\) See id.

\(^{114}\) Id. at 5 (citing Save Our Wetlands v. Rush, Civ. A. No. 75–3710 (E.D. La. Dec. 30, 1977)).


\(^{116}\) See id. at 191–93.

\(^{117}\) SCIENCE AND THE STORMS, supra note 99, at i.

\(^{118}\) ASCE, supra note 105, at v–vii.
Katrina made landfall with Louisiana as a category three storm on the morning of August 29, 2005.\textsuperscript{119} The storm, which reached a category five level while south of the Mississippi River on August 28, created surges which reached twenty feet above sea level along New Orleans’ levees; Hurricane Katrina did not spare the coasts of Mississippi and Alabama.\textsuperscript{120} Even before sea levels had risen to their highest levels, many levees had already breached.\textsuperscript{121} As early as 5:00a.m., a levee breach had left the Lower Ninth Ward flooded.\textsuperscript{122} In the hours that would follow, eighty percent of New Orleans would be underwater and over 1000 members of the community would die.\textsuperscript{123} The Gulf Coast—and the NFIP—has not been the same since.

III. NFIP Post Katrina

A. Post-Storm Claims

Hurricane Katrina took a devastating toll on the NFIP.\textsuperscript{124} In 2005, FEMA paid out $17.5 billion compared to a mere $632 million in 2006 and $523 million in 2007.\textsuperscript{125} By May 2007, FEMA had borrowed over $17 billion from the federal government, leading President Bush to seek authorization for a law that would expand the borrowing powers of the NFIP in order to ensure that the Program could continue to pay claims for losses resulting from Katrina.\textsuperscript{126}

Approximately one and a half years after Katrina, FEMA announced that it had already resolved over ninety percent of its claims arising out of Hurricanes Katrina and Rita.\textsuperscript{127} Private insurers also pub-

\begin{itemize}
\item \textsuperscript{119} Id. at 15.
\item \textsuperscript{121} ASCE, \textit{supra} note 105, at 27.
\item \textsuperscript{122} Id.
\item \textsuperscript{123} Id. at 1.
\item \textsuperscript{125} FEMA, Loss Dollars Paid by Calendar Year, http://www.fema.gov/business/nfip/statistics/cy2007lsdoll.shtm \textit{(last visited May 14, 2010)}.
\item \textsuperscript{126} SUMMARY OF KEY PROVISIONS, \textit{supra} note 124. It is important to note that FEMA must repay any borrowed funds with interest. \textit{Id.}
\item \textsuperscript{127} News Release, FEMA, \textit{NFIP Meets Milestone In Resolving Claims To Victims Of Hurricanes Katrina And Rita} (Mar. 15, 2006), \textit{available at} http://www.fema.gov/news/newsrelease.fema?id=24238.
\end{itemize}
licized their efforts in resolving homeowners insurance claims. The Insurance Information Institute claimed that ninety-five percent of homeowners insurance claims in Louisiana and Mississippi had been settled within a year of the tragedy. An IPSOS Public Affairs poll even found that four in five claim-filers were happy with the results of the process.

However, a troubling statistic in the aftermath of Katrina was the poor participation rate of homes covered under the NFIP. New Orleans was reported to have the highest participation rate of all of the communities in the Gulf Coast region, but even in New Orleans, participation did not break sixty percent. Nationally, the number of buildings in flood prone areas to secure flood insurance is estimated at around twenty percent.

B. Wind vs. Water Disputes

1. Conflict of Interest

The most difficult insurance controversy to emerge from Katrina arose from the distinction between wind and water when assessing the damage to homes. The difficulty in assessing whether a home was damaged because of wind or flooding is tremendous when the assessor is forced to make a determination based on a mere slab of concrete. Potential conflicts of interest emerged immediately after the storm based upon the fact that homeowner policies, while covering wind, do not cover flooding. Since many WYO insurers, who are backed by the federal government for flood losses, also provide homeowners policies, some speculated that these insurers had assessed damage as flood-related rather than wind-related in an effort to avoid financial liability.

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129 Id.
130 Id.
132 Id. Many counties in Mississippi had extraordinarily low participation, with Harrison and Jackson counties as low as ten percent participation in the program. Id.
133 Douglas R. Richmond, Insurance and Catastrophe in the Case of Katrina and Beyond, 26 Miss. C. L. Rev. 49, 56 (2006–2007).
134 Wind vs. Flood, supra note 5, at 1.
135 Id.
136 See id. at 3.
137 See Taylor, supra note 8, at 783.
As previously mentioned, a study from the Office of Inspector General (OIG) found no evidence of WYO insurers attributing wind damages to flooding.\textsuperscript{138} While the OIG found that over thirty percent of its sample did include error in terms of assessing the cause of damage, only 2 of 131 instances of error clearly showed improper delegation of wind damage to the NFIP.\textsuperscript{139} The OIG report does illustrate, however, just how difficult it is to distinguish between wind and flood damage when both occur concurrently.\textsuperscript{140} Further, a 2007 Government Accountability Office (GAO) study determined that there is a conflict of interest in allowing a WYO company to be responsible for adjusting both a homeowners policy and an NFIP flood insurance policy at the same time.\textsuperscript{141}

2. Litigation

The controversy of wind versus flood escalated when Mississippi Attorney General Jim Hood sued Allstate Insurance Co., petitioning the court to void flood exclusions from homeowners policies and thereby compel the insurance company to pay for damage from the storm.\textsuperscript{142} Allstate responded that it did not intend to pay claims that they had never insured.\textsuperscript{143} Allstate emphasized that the NFIP had taken serious efforts to advertise flood insurance in the Gulf Coast, and that Allstate policyholders clearly understood that they were not insured for flooding.\textsuperscript{144}

The litigation that followed Katrina did little to clarify whether homeowners policies could be uniformly interpreted.\textsuperscript{145} The main issue in much of the litigation was whether flood exclusions should deprive policyholders of their claims when both wind and flooding contributed to losses.\textsuperscript{146}

\textsuperscript{138} Wind vs. Flood, \textit{supra} note 5, at 5.
\textsuperscript{139} \textit{Id.} at 6.
\textsuperscript{140} \textit{Id.} at 10.
\textsuperscript{141} \textit{Id.} at 12.
\textsuperscript{143} \textit{Id.}
\textsuperscript{144} \textit{Id.}
\textsuperscript{146} Scales, \textit{supra} note 73, at 26.
One court employed a narrow analysis of the term “flood.” In *Buente v. Allstate Property & Casualty Insurance Co.*, the District Court for the Southern District of Mississippi denied the plaintiffs’ motion for summary judgment because the plaintiffs’ home was destroyed by a tidal wave in the storm, the coverage of which being clearly and unambiguously excluded from coverage in the policy. The main issue was whether the damage to the plaintiffs’ home was attributable to the flood exclusions in the Allstate policy. The plaintiffs were insured under a Deluxe Homeowners Policy that Allstate has issued. The policy insured against “sudden and accidental direct physical loss . . . except as limited or excluded by this policy.” The exclusions to the policy were losses caused by “[f]lood, including, but not limited to surface water, waves, tidal water or overflow of any body of water, or spray from any of these, whether or not driven by wind.”

With no dispute that water entered the home and lead to damage, Allstate believed that their policy provisions were “clear and unambiguous.” The plaintiffs believed that since “storm surge” was not specifically listed or defined in Allstate’s exclusionary policy, that it should have been covered as a loss.

The court, ruling in favor of Allstate, made clear that the exclusions to the policy were written broadly with the intent of excluding inundation damages. The court found that since the water that entered the plaintiffs’ home was tidal water, it fell under the definition of flooding, which was found in the exclusionary provision of the plaintiffs’ homeowners policy.

Further litigation surrounded the use of anti-concurrent causation (ACC) clauses found in many homeowner policies. In *Tuepker v. State Farm Fire & Casualty Co.*, State Farm’s motion to dismiss was denied after the court concluded that an ACC clause in a homeowners policy was

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148 Id. at *1–2.
149 Id. at *1.
150 Id.
151 Id.
152 Id. (quoting the plaintiffs’ insurance policy, Allstate Policy No. 9–15–930365 § I).
154 Id.
155 Id.
156 Id. at *1–2.
unenforceable when wind and flooding both play a role in the destruction because the clause was ambiguous.\textsuperscript{158} Major insurers relied on ACC clauses as their justification for only paying for damage that was clearly isolated to wind alone.\textsuperscript{159} The ACC clause in question read:

2. We do not insure under any coverage for any loss which would not have occurred in the absence of one or more of the following excluded events. We do not insure for such loss regardless of: (a) the cause of the excluded event; or (b) other causes of the loss; or (c) whether other causes acted concurrently or in any sequence with the excluded event to produce the loss; or (d) whether the event occurs suddenly or gradually, involves isolated or widespread damage, arises from natural or external forces, or occurs as a result of any combination of these.\textsuperscript{160}

State Farm argued that the language of their ACC clause barred coverage for inseparable damage, as long as the damage would not have occurred in the absence of water.\textsuperscript{161} The Court of Appeals affirmed the district court’s ruling, meaning that the insureds could not recover for damages resulting from a storm surge.\textsuperscript{162} The combination of the ACC clause and the water damage exclusion found in the State Farm policy led the court to reason that “indivisible damage caused by both excluded perils and covered perils or other causes” was not covered under the policy.\textsuperscript{163}

The Fifth Circuit also handled litigation in Louisiana, beginning with \textit{In re Katrina Canal Breaches Litigation}.\textsuperscript{164} The plaintiffs in the case were policyholders who had purchased homeowners, renters, or commercial property insurance.\textsuperscript{165} The plaintiffs argued that the negligent design, construction, and maintenance of levees caused the flooding of New Orleans.\textsuperscript{166} The plaintiffs argued further that since policies did not clearly exclude damages that were caused by negligence, they should be

\textsuperscript{158} Id. at *4.
\textsuperscript{159} See Taylor, \textit{supra} note 8, at 784.
\textsuperscript{160} Teupker v. State Farm Fire & Cas. Co., 507 F.3d 346, 351 (5th Cir. 2007).
\textsuperscript{161} Id. at 352.
\textsuperscript{162} Id. at 353.
\textsuperscript{163} Id. at 354.
\textsuperscript{164} 495 F.3d 191 (5th Cir. 2007).
\textsuperscript{165} Id. at 196.
\textsuperscript{166} Id. (“At one point following Katrina’s aftermath, approximately eighty percent of the city was submerged in water.”).
entitled to relief. The Court of Appeals for the Fifth Circuit held that the water that flowed through the failed levees of New Orleans constituted a flood regardless of the reasons. As such, the court ruled that the cause of flooding was immaterial and that the flood itself was unambiguously excluded from coverage under plaintiffs’ all-risk policies.

C. Action for Reform

1. State Action

Many coastal states have taken action to deal with insurance availability and affordability issues following storms. For instance, following Hurricane Andrew, Florida found its insurance industry in turmoil, leading the state legislature to create a state-sponsored insurance system. Numerous states have become insurers for people in high-risk areas. These states have created wind pools, which are insurance pools available for property owners who cannot find coverage elsewhere. The pools also provide reinsurance, which is essentially insurance for insurance companies. Normally an insurance company will pay a premium to a private reinsurance company who will indemnify it for some of its exposure on issued policies. Essentially an insurer hedges its losses by ensuring the certainty of a smaller loss. Often, the state wind pool is the insurer of last resort for many coastal communities.

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167 Id. at 196.
168 Id.
169 In re Katrina Canal Breaches Litig, 495 F.3d at 196. In Bilbe v. Belsom & State Farm Fire and Casualty Co., the court again found that State Farm’s ACC clause and water damage exclusions were valid, reasoning that these policies unambiguously exclude damage for all flooding whether driven by hurricane winds or not. See No. 06-7596, 2007 WL 2042437, at *4 (E.D. La. July 12, 2007), aff’d, 530 F.3d 314 (5th Cir. 2008).
170 See NATURAL CATASTROPHIC INSURANCE, supra note 3, at 1.
172 NATURAL CATASTROPHE INSURANCE, supra note 3, at 1.
174 Agnew, supra note 171, at 716; Richmond, supra note 133, at 52.
175 Richmond, supra note 133, at 52.
176 Agnew, supra note 171, at 716.
177 Taylor, supra note 8, at 788. Many states’ wind pools have been burdened with policies as private insurers have backed out of markets. Forty percent of Cape Cod’s policies have been forced into the Massachusetts FAIR plan, while half of the policies in Texas coastal counties are inside the Texas Wind Pool. Id. at 789.
2. NFIP Reform Efforts

Following Katrina, there has been political pressure to amend the NFIP to include wind coverage as well as flood coverage.\(^{178}\) On September 23, 2008, the House of Representatives passed a seven month NFIP extension so that lawmakers could patch up the differences envisioned for the future of the Program.\(^{179}\) Prior to the financial crisis beginning in the fall of 2008, House Financial Services Committee Chairman Barney Frank and Senate Banking Committee Chairman Chris Dodd had been attempting to finalize efforts to reform the NFIP.\(^{180}\)

The House proposal, H.R. 3121, referred to as The Flood Insurance Reform and Modernization Act of 2007, would have established the Multiple Peril Insurance Act as introduced by Rep. Gene Taylor (D. MS).\(^{181}\) With many insurance companies withdrawing from coastal areas, state-sponsored insurers have been forced to handle a disproportionate number of policies.\(^{182}\) The Multiple Peril Insurance Act, or H.R. 920, which was incorporated into H.R. 3121, would have eased that burden and provided protection to homeowners following damage resulting from both flood and wind.\(^{183}\) Unlike more traditional homeowner and federal policies, H.R. 920 would have provided approval and payment of claims without requiring that a specific cause of loss be identified.\(^{184}\) The bill aimed at allowing up to $500,000 for any residential unit and $150,000 for any contents related to the unit.\(^{185}\) For non-residential units, the maximum building coverage would have been increased to $1,000,000, and the contents of the structure could be covered up to $750,000.\(^{186}\)

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\(^{181}\) Taylor, supra note 8, at 790.


\(^{184}\) H.R. 920, § 2(4).

\(^{185}\) Id. § 2(7)(A).

\(^{186}\) Id. § 2(7)(B).
H.R. 920 was authored in an effort to eliminate the use of ACC clauses from insurers who provide homeowners insurance and also participate in the WYO program. To procure wind coverage, a homeowner would need to also acquire flood coverage. Further, communities would need to adopt building codes consistent with the International Building Codes (IBC) before members of their communities would be eligible for the multiple peril insurance. The IBC requirement would result in premiums being set through the adjustment of building characteristics and other construction methods.

The bill’s ultimate goal was stability in the insurance market. In many coastal communities insurance companies have left, deciding against writing policies in high risk areas. Agents would receive commissions for selling the multiperil policy and be reimbursed for losses stemming from administrative expenses. The Act would also spread hurricane risk geographically. The drafters believed that since a multiple peril program would be applicable to a wider area of coastal communities than private insurance currently accommodates, the Act would stabilize the economics of the NFIP. Further, the program would eliminate any doubt for homeowners as to whether they would be covered by insurance when a storm was looming.

H.R. 920 passed through the House and the Financial Services Committee, but was delayed on its way to the Senate. There is no question that proposals for the NFIP to include wind coverage will be addressed in the near future.

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187 See Taylor, supra note 8, at 792.
188 Id. at 791.
189 Id.
190 Id. at 792.
191 See id. at 790.
192 Id.
193 Taylor, supra note 8, at 791.
194 Id.
195 See id.
196 Id. at 790.
197 Id. at 792; see Becker, supra note 180, at 65 (discussing a similar fate for H.R. 3120).
198 See Becker, supra note 180, at 65, 66. Representative Gene Taylor, a Democrat from Mississippi, has sponsored the Multiple Peril Insurance Act of 2009, which would “make available multiple peril coverage for damage resulting from windstorms or floods, and for other purposes.” H.R. 1264, 111th Cong. (2009).
IV. Problems Facing NFIP Wind Addition

A. Increased Financial Instability of NFIP

1. NFIP Debt

The addition of wind coverage to the NFIP will further exacerbate economic problems for an already fiscally unsound program.\textsuperscript{199} A 2006 letter from Congressional Budget Office Director Donald Marron to Senator Judd Gregg illustrates that the NFIP’s financial position is unsustainable because FEMA lacks both the resources to cover the Program’s costs and the authority to make changes that can ensure fiscal success.\textsuperscript{200} Marron notes that the Program’s current and future obligations for policyholder claims, operating expenses, and debt service are likely to far exceed its income from premiums.\textsuperscript{201}

The NFIP is currently $17.3 billion in debt to the U.S. Treasury, with the number likely reaching the $20 billion mark in the near future.\textsuperscript{202} The Senate estimates that the interest on NFIP debt alone is more than thirty percent of the premiums received by the Program in 2007.\textsuperscript{203} The NFIP’s debt is attributable to its failure to reduce subsidies or encourage prudent building choices in flood-risk zones.\textsuperscript{204} Approximately $500 million is lost annually to subsidized properties that fail to pay premiums based on the true risks that they face.\textsuperscript{205} Further, repetitive loss properties are a significant drain on the Program.\textsuperscript{206}

Adding wind coverage to the NFIP will be inefficient because the Program will likely stray from some of the key priorities of the private wind insurance market.\textsuperscript{207} Private market wind insurance policies can be very expensive in high-risk areas.\textsuperscript{208} High prices are nothing more than a reflection of the risk facing properties rather than an ineffective

\textsuperscript{199} Boggs, \textit{supra} note 178.
\textsuperscript{201} Id.
\textsuperscript{202} Wood, \textit{supra} note 89, at A6.
\textsuperscript{203} Id. The Program’s annual interest on debt is estimated at $900 million, while the Program received $2.9 billion in premiums during 2007. \textit{Id}.
\textsuperscript{204} See Pham, \textit{supra} note 2, at 634–35.
\textsuperscript{206} See King, \textit{supra} note 15, at 19.
\textsuperscript{207} Hearings, \textit{supra} note 182, at 17 (statement of Phillip Swagel).
\textsuperscript{208} Id.
market. A key to successful private wind insurance markets is adjusting insurance rates to mirror the true risk posed by wind damage.

A federal program providing wind coverage will likely subsidize the price of wind insurance, rather than charging actuarial rates that would be considered unaffordable by many politicians looking to serve the interests of their constituents. The history of the NFIP’s policies illustrates this theory. The Program allows for below actuarial rates to be applied to pre-FIRM buildings, thereby straining the financial viability of the Program. RLPs, accounting for only one percent of all total policies nationwide, sap the NFIP of thirty percent of its total claim payouts. A wind coverage program that is promoted by the federal government would produce subsidized rates that would fall into the same debt pattern as subsidized flood policies.

2. Taxpayer Burden

Taxpayers—most of whom will not benefit from the Program—will be further burdened by the addition of wind coverage to the NFIP. One study found that if a hurricane season comparable to 2005 were to occur again in 2009, the proposals for NFIP reform would disproportionately burden many states. California taxpayers would pay $19 bil-

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209 Id.
210 Hearings, supra note 182, at 16 (statement of David Maurstad).
211 Id. at 18–19.
212 See Christine M. McMillan, Comment, Federal Flood Insurance Policy: Making Matters Worse, 44 Hous. L. Rev. 471, 503–04 (2007). Instead of operating as a true insurance program, the NFIP has been conducted as a welfare program because it fails to find an appropriate balance between risk and premium rates and fails to establish a system in which the insurance provider anticipates liabilities and plans for payouts without borrowing from external sources. Id.
213 See King, supra note 15, at 5, 14.
214 Id. at 20.
215 See Hearings, supra note 182, at 18–19 (statement of David Maurstad). While Mr. Maurstad believes that actuarial rates could be achieved, he notes that it is important to realize that these actuarial rates are expensive. Id. Since the rates would be based on the number of policies and the premium that would be generated, the pool would be rather small. Id. This would push actuarial rates to price levels that most people would consider unaffordable, leaving Congress with the burden of discounting these rates and creating subsidies similar to those in the flood program. Id.
217 SHAPIRO & MATHUR, supra note 216, at 1.
lion; New Yorkers $11 billion; $6 billion each for residents of Pennsylvania and New Jersey; and $4 billion each for taxpayers from Massachusetts, Michigan and Virginia.\(^{218}\) None of these states would be substantially affected by a hurricane of the magnitude of the 2005 storms.\(^{219}\)

If wind coverage is added to the NFIP, and a greater amount of people begin purchasing policies in centralized risk areas, the Program will deal with greater issues surrounding adverse selection.\(^{220}\) Providing subsidies to combat the problem of adverse selection will lead to other issues in the NFIP.\(^{221}\) Adverse selection occurs when an insurance carrier’s rates are forced higher because the insurer does not have an adequate spread of risk to cover expenses and pay losses.\(^{222}\) The demographics that tend to purchase the insurance through the carrier are usually in high-risk areas that are likely to suffer a loss.\(^{223}\) As less people can afford the rates of insurance, the policy holders become centralized in areas of high risk, which heightens an issuer’s exposure to potential damage.\(^{224}\) The current statistics in the NFIP illustrate the problems of centralized policies.\(^{225}\) The states of Florida, Mississippi, Alabama, Louisiana, and Texas account for over sixty percent of the current policies under the NFIP.\(^{226}\) Even so, only about twenty percent of homeowners living in flood-prone areas purchase flood insurance.\(^{227}\)

B. Private Wind Insurance Is Working

1. Private Insurance Model

The addition of wind coverage to the NFIP will handicap a rather efficient private wind insurance market.\(^{228}\) The federal government historically offers insurance, such as flood insurance, when the private market does not offer coverage that the public requires.\(^{229}\) The private

\(^{218}\) Id.

\(^{219}\) See id.

\(^{220}\) Boggs, supra note 178.

\(^{221}\) Id.


\(^{223}\) Id.

\(^{224}\) Id.


\(^{226}\) Id.

\(^{227}\) Richmond, supra note 133, at 56.

\(^{228}\) See Hearings, supra note 182, at 16 (statement of David Maurstad); Shapiro & Mathur, supra note 216, at 1.

\(^{229}\) Hearings, supra note 182, at 16 (statement of David Maurstad).
wind insurance market makes wind insurance readily available; however, the private market has been supplemented by state-sponsored wind pools that augment the availability of private-market policies to homeowners.\footnote{Id.}

The private insurance industry survives on risk.\footnote{See id. at 26–27 (statement of Gary Miller).} A for-profit insurance company employs an educated gamble that the premiums they collect will ensure profit for the company whenever it issues a policy.\footnote{See id. at 27.} By placing the wind insurance market in the hands of the NFIP and the Department of Treasury, the risk of the gamble failing is shifted from the private market, which is the most efficient sector in the insurance arena, to the federal taxpayers.\footnote{See id. at 26–27.} Taxpayer risk is inappropriate considering that the private insurance industry can better assess appropriate premium levels.\footnote{GAO, NATURAL CATASTROPHE INSURANCE: ANALYSIS OF A PROPOSED COMBINED FEDERAL FLOOD AND WIND INSURANCE PROGRAM 13 (2008) [hereinafter ANALYSIS OF COMBINED PROGRAM].} FEMA lacks necessary in-house wind modeling and actuarial expertise that most private insurance market participants have at their disposal to develop, interpret, and translate wind models into premium rates.\footnote{Id. at 13 n.17.} For instance, most insurance market participants use computer programs offered by modeling firms to estimate the financial consequences of natural catastrophe scenarios while managing financial exposure.\footnote{See Wind vs. Flood, supra note 5, at 3; Hearings, supra note 182, at 8 (statement of Gene Taylor) (hypothesizing on the mindset of claims adjusters arbitrarily attributing damage to flooding).}

2. Refuting Bad-Faith Allegations

Proponents of H.R. 3121 believe that bad faith among WYO insurers is a primary reason that wind coverage should be included under the NFIP.\footnote{Wind vs. Flood, supra note 56, at 5.} Their theory is that claim adjusters working for a WYO company on homeowners’ flood and wind claims are not objective and attribute more damage to flood damage rather than wind damage because flood losses are paid out through the federal government rather than the private company.\footnote{Wind vs. Flood, supra note 56, at 5.} However, an OIG report has refuted that
argument. The OIG report also interviewed twenty NFIP adjusters to determine how they conducted their claims adjustments. No adjusters felt pressure from WYOs to falsely attribute damage to flooding. In most cases where a homeowner had both flood and wind policies with one WYO company, the company used a different adjuster for each policy to prevent any conflict of interest in the damage assessment.

Ironically, the addition of wind coverage to the NFIP could produce more conflicts of interest. Hypothetically, WYO insurers will be providing wind and flood coverage under the NFIP, as well as their own separate wind coverage. Officials from the GAO and FEMA agree that WYO insurers face a conflict of interest because of the incentive to sell federally backed multiple peril policies to high-risk customers while targeting their own policies to lower-risk customers.

3. Cost and Coverage Discrepancies

The extension of wind coverage in the NFIP will most likely experience limited participation because the federal program will be more expensive than purchasing a combination of flood insurance through the NFIP and wind insurance through a state-run program. A GAO study concluded that for a residential property in Louisiana, combining the maximum policy limits of the NFIP flood program and the state wind program policy limit would provide a homeowner $1,220,000 in coverage. In comparison, a homeowner would only be able to receive $650,000 through a federal dual wind and flood policy. The disparity is magnified for commercial properties, which would see a difference of $6,590,000 between NFIP flood and state

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239 Id. at 6.
240 Id. at 7.
241 Id.
242 Id. at 12.
243 See Analysis of Combined Program, supra note 235, at 11.
244 Id.
245 Id. FEMA noted that it would be difficult to preclude WYO insurers from employing this tactic without prohibiting them from selling their own policies. Id. at 11–12.
247 Analysis of Combined Program, supra note 235, at 22.
248 Id.
wind policies as compared to the federal dual policy. The lower coverage rates available to homeowners under the federal proposal may lead some to obtain additional insurance on top of the federal program. By purchasing extra coverage, homeowners would need to obtain a determination of total wind damage in order to separate their policy, which will lead to confusion, disputes, and litigation that advocates of reform similar to H.R. 3121 are trying to avoid.

C. Enabling Improper Land Use

Political pressure and affordability issues will most likely push federal wind coverage below market value, which in turn will reduce the incentives for people to relocate to safer areas. Two of the primary goals of the NFIP are to encourage state and local governments to make appropriate land use decisions and to guide future development away from locations that are threatened by flood hazards. The NFIP has not achieved either goal to date.

The communities reliant on the potential federal wind insurance will need to realize the dangers and risks that threaten them. While there are many instances of people living in at-risk areas because they could either not afford to live elsewhere or were too unaware of the flood hazard to make informed decisions on habitability, many people in floodplains largely ignore the danger around them. Part of this problem falls squarely on the NFIP, which negligently maintains flood maps and fails to effectively promote mitigation options in at-risk communities. In fact, some believe that the NFIP supports development in

\[\text{id.}\] 249 Id.
\[\text{id. at 27.}\]
\[\text{id. Gene Taylor writes that the program would, “allow coastal residents to buy insurance and know their hurricane damage would be covered without needing to hire lawyers, engineers, and public adjusters to try to distinguish the wind damage from the flood damage.” Taylor, supra note 8, at 790.}\]
\[\text{Shapiro & Mathur, supra note 216, at 2.}\]
\[\text{42 U.S.C. § 4001(e) (2006).}\]
\[\text{See McMillan, supra note 212, at 475 (assessing as negligent the allowance of development in previously devastated areas).}\]
\[\text{Hearings, supra note 182, at 17 (statement of David Maurstad).}\]
\[\text{Martin M. Randall, Coastal Development Run Amuck: A Policy of Retreat May Be the Only Hope, 18 J. ENVTL. L. & LITIG. 145, 152 (2003).}\]
\[\text{See id. at 154. James L. Witt, then FEMA Director, announced that “[p]eople need to accept the responsibility and the consequences of their choice to live in high-risk areas.” Id.}\]
\[\text{J. Robert Hunter, False Claims, N.Y. TIMES, May 4, 2006, at A31, available at http://www.nytimes.com/2006/05/04/opinion/04hunter.html?_r=1 (showing that the 100-year flood levels predicted on the old maps for Hancock County, Mississippi are about ten feet below what new maps forecast).}\]
high-risk areas. Communities themselves must bear part of the blame because ultimate authority over the management of the programs lies in their hands. NFIP participation statistics illustrate that for whatever reason, consumers tend to underestimate the risks they face.

D. Moving Forward Without Wind

There are many necessary improvements that must be made to the NFIP before the inclusion of wind insurance is considered. Most importantly, the NFIP’s priority should be regaining financial stability without accruing additional liability. The first step towards achieving financial stability will be to require correct administration of the Program. FEMA must update its flood risk maps to ensure that taxpayers are not subsidizing construction in unsafe areas. The Program must strive for actuarially sound rates, which will require sufficient premiums to build reserves for expected future flood losses. The main source of financial trouble for the NFIP—repetitive loss properties—must be heavily reduced or eliminated if the Program is to rebound from the debt it currently faces.

Instead of adding wind coverage to the NFIP, Congress should focus on forgiving the NFIP’s current debt and encourage safety-oriented reform solutions for the Program. By forgiving the Program’s debt, the NFIP can look towards the future by building reserves for the next inevitable storm. By encouraging safety-oriented solutions for the NFIP,

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259 McMillan, supra note 212, at 499 (“Congressional findings indicate that the availability of insurance often determines the practicability of development.”).


261 See Analysis of Combined Program, supra note 235, at 19 (opining that consumers tend to underestimate their risk of catastrophic loss); Richmond, supra note 133, at 56 (explaining that in some of the areas of Mississippi that were hardest hit by Katrina, fewer than one in ten homes had flood insurance); Scales, supra note 73, at 17 (pondering why so few homeowners choose to purchase flood insurance).

262 See Letter to Maxine Waters, supra note 246, at 2.

263 Id. at 4.

264 See Hunter, supra note 258.

265 Id.; Letter to Maxine Waters, supra note 246, at 3.


267 See McMillan, supra note 212, at 504–05.

268 Becker, supra note 180, at 65.


270 Becker, supra note 180, at 65.
such as strictly enforcing community land-use measures, Congress can ensure that when the next storm hits the gulf coast, homeowners will be better prepared to handle any damage that occurs.271

Leaving state wind programs and the private insurance market as the primary sources of wind coverage will benefit homeowners and the NFIP.272 Homeowners will benefit because they will be able to obtain higher levels of coverage through state wind programs than they will through the proposed federal model.273 Potentially, many homeowners could be left inadequately insured under the federal program.274 The NFIP will profit because FEMA administrative resources will not be drained in implementing a new program.275 Instead of stretching its workforce thin, FEMA can dedicate its work to correcting the management and financial problems that currently plague the NFIP.276

**Conclusion**

The National Flood Insurance Program is essential for the protection and insurance of millions of American homeowners who stand in the path of impending natural disasters. Following the storms of 2005, the NFIP has experienced financial failure which threatens its very existence. Now is the time that Congress must look to rectify the Program so that it can achieve fiscal stability. This entails re-developing outdated flood maps and strengthening mitigation measures. However, rectifying the Program cannot include the addition of wind coverage. Adding the additional liability of wind coverage to the NFIP will exacerbate lingering problems such as subsidized coverage that fails to meet actuarial standards, adverse selection, and improper land use. While insuring that people are safe from high winds and flooding should be a priority for legislators, attempting to do so by subsidizing risky development at the expense of federal taxpayers is fiscally unsound and unsafe in practice.

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271 See Americans for Smart Natural Catastrophe Policy, supra note 267; Letter to Maxine Waters, supra note 246, at 3.

272 See Analysis of Combined Program, supra note 235, at 3, 22.

273 Id. at 22. The difference between the average combined NFIP flood and state wind program policy limit and the federal flood and wind program coverage limit would be $1,078,750. Id.

274 Id. at 27.

275 Id. at 3.

276 Id.
GREEN BUILDING REGULATIONS: EXTENDING MANDATES TO THE RESIDENTIAL SECTOR

Mariel S. Dator*

Abstract: As global warming has garnered significant attention in recent years, sustainability and green campaigns throughout the nation have become more common. Efforts to mitigate the human footprint have led to important developments in sustainable building design and construction. Although much attention is paid to other industry sectors such as transportation, buildings are a major source of greenhouse gases. Green buildings are more efficient and employ a variety of both construction techniques and renewable materials that result in less environmental harm and increased energy efficiency. Municipalities have encouraged large-scale green building projects through mandates or tax incentives. However, the residential sector in most municipalities remains free from these mandates and incentives. This Note argues that the residential sector should be subject to green building mandates.

Introduction

Green building development has increased significantly over the last few years as a number of large cities across the country have increasingly developed sustainable building programs.1 Information regarding buildings’ contributions to the nation’s carbon emissions, as well as the development of cleaner building technologies, has led to increased regulations and green program development across all levels of the government.2 Popular culture, celebrity endorsement, and corporate responsibility have furthered the trend to “go green,” especially with sustainable building.3 Buildings are a significant contributor to


2 Id. at 623.

3 See Melissa A. Orien & Theresa Laughlin Silver, Climate Change Is Heating Up the Construction Industry, CONSTRUCTION LAW., Winter 2008, at 36, 36; Robin Pogrebin, Brad Pitt Commis-
energy waste and inefficiency. According to some estimates, they account for 40% of the nation’s greenhouse gas (GHG) emissions and 70% of electrical consumption. Bolstered by the volatile and mounting costs of energy dependence on fossil fuels and the recognition of the country’s enormous contribution to carbon emissions, energy efficiency has driven the overall movement to become more environmentally responsible.

Within the last few years, cities, states, and the federal government have increased their efforts to promote, endorse—and in some cases mandate—sustainable building construction. Much of the regulation has focused on government buildings. However, as residential structures comprise a dominant portion of the large-scale real estate market, various governments have developed green programs to regulate construction in the residential sector as well.

The government administers programs regulating green building at different levels, and the applicability of such programs to certain types of structures varies significantly. The government encourages green building through a range of programs including voluntary guidelines, tax and construction incentives, and mandates.


5 Id.

6 See Tracy Jan, Not to Be Out-Greened, BOSTON GLOBE, July 29, 2008, at B1 (noting a trend that colleges are becoming more environmentally conscious); Robert Knox, Turning Off the Lights and Other Ways Towns Are Trying to Save Money, BOSTON GLOBE, July 31, 2008, at S1 (discussing the efforts towns and schools make to be more energy efficient).

7 See generally Abair, supra note 1 (discussing recent trends).

8 See id. at 626.

9 See id. at 632.


11 See id.

12 See Abair, supra note 1, at 625.
This Note will discuss the development of mandatory regulation and address the obstacles facing the adoption of regulation for private, residential construction projects. Part I describes how urbanization and the rise in residential buildings contribute to U.S. energy inefficiency and wider global emissions. Part II explores the green housing market and its failure to foster green building standards. Part III describes the basics of green building principles, the types of regulations green programs are implementing across the country, and the failure of these programs to include regulations for residential structures. Part IV argues that mandatory green regulations should be extended to residential structures.

I. RESIDENTIAL BUILDINGS’ CONTRIBUTION TO ENVIRONMENTAL PROBLEMS

Evidence indicates that buildings contribute to increased carbon emissions and energy inefficiency because of construction methods and buildings’ subsequent energy practices. Although regulatory programs seeking to curb the nation’s carbon emissions have focused on transportation, buildings have now surpassed the transportation sector in terms of contributions of greenhouse gases. Fifty years ago, the transportation sector and building construction emitted almost equal shares of all carbon dioxide emission in the United States, with industry inflicting the most harm; last year, it was estimated that buildings now contribute 14% more carbon dioxide than the transportation sector and 34% more than industrial activities. Recent studies show that the real estate sector has clearly surpassed the other major economic sectors, suggesting the need for increased attention to building regulation. Pollution is not always transport-related, and some of the most

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13 Infra Part I.
14 Infra Part II.
15 Infra Part III.
16 Infra Part IV.
19 Id.
significant contributions affecting developing cities are entirely industrial.\textsuperscript{21} One of the largest industrial producers of waste is the construction industry.\textsuperscript{22} Data suggests that construction may contribute up to 40\% of waste production.\textsuperscript{23} Conventional buildings also consume massive amounts of natural resources and have a substantial impact on air quality.\textsuperscript{24} The growing emphasis on green building is well warranted, as statistics show that buildings account for 65\% of electricity consumption, 30\% of greenhouse gas emissions, 30\% of raw materials use, 30\% of landfill waste, and 12\% of potable water consumption.\textsuperscript{25}

Although these statistics generally take all buildings into account, most regulations focus only on buildings owned or funded by the government or commercial buildings.\textsuperscript{26} The contribution of residential buildings to energy inefficiency and GHG emissions has been underap-


\textsuperscript{24} See Bronin, supra note 17, at 244–45 (“Buildings generate thirty-five to forty percent of the nation’s carbon dioxide emissions, . . . forty-nine percent of sulfur dioxide emissions, twenty-five percent of nitrous oxide emissions, and ten percent of particulate emissions.”); see also U.S. Green Bldg. Council, supra note 22, at 1 (providing similar statistics).


preciated. Census information shows that large-scale residential structures—rarely the focus of any green building regulation—make up a significant percentage of buildings in the United States. There are an estimated 130 million residential buildings in existence today compared with 6.23 million office buildings. Residential buildings significantly impact the environment, accounting for 22% of national energy use and GHG emissions, and 74% of water use. However, existing mandates generally do not cover residential buildings. Regulations concerning new large-scale construction projects have focused predominantly on either government-owned buildings or government-funded structures.

A. Implications of Urbanization and the Growth of Cities

The expected growth of cities and population trends suggest that increased urbanization will continue to occur, fuelling concerns of escalating harms to the environment. According to recent United Nations reports, “50 percent of the entire human race [is] currently living in cities and [is] responsible for emitting up to 80 percent of all global carbon dioxide . . . emissions every year.” Historically, this percentage of urban population is the highest that has ever lived in cities and trends show that city populations are only set to increase. Consequently, urban areas are responsible for a majority of carbon emissions.

28 See Buildings and the Environment, supra note 27, at 1.
29 See id. There are more than 82 million residential buildings and about 75 billion square feet of commercial floor space in American buildings. By the year 2015, over 15 million households and 11 billion square feet of commercial space will be added to these figures. Edna Sussman, Reshaping Municipal and County Laws to Foster Green Building, Energy Efficiency, and Renewable Energy, 16 N.Y.U. Envtl. L.J. 1, 9 (2008).
30 Press Release, N.Y. State Senator Craig Johnson, Senate Passes Legislation to Encourage Homeowners to Build and Renovate Homes that Comply with Green Building Standards (June 23, 2008) (on file with author) [hereinafter New York Senate Press Release].
31 See Abair, supra note 1, at 625–26; FEMP Federal Requirements, supra note 26.
34 Oliver, supra note 21; see Dawson et al., supra note 33, at 7.
36 Dawson et al., supra note 33, at 7–8; Oliver, supra note 21.
Increases in urban emission rates and energy use fuel concern over the environmental impact of cities.\textsuperscript{37} Urban areas are denser and automobile use is relatively less when compared to other areas.\textsuperscript{38} The energy use of urban dwellers in major cities can be twice the national average.\textsuperscript{39} GHG emissions rates have increased steadily as compared to both emissions rates in previous years and GHG emissions from other industry sectors.\textsuperscript{40} The source of this increase has been traced to buildings.\textsuperscript{41}

Renting and housing statistics evidence the trend of urbanization within the United States.\textsuperscript{42} An estimated 89 million people—almost a third of the U.S. population—rent their homes.\textsuperscript{43} Forty-four percent of these renters live in buildings with more than five units.\textsuperscript{44} Moreover, statistics show that an average of 210,000 new apartment homes have been constructed annually in the last five years.\textsuperscript{45} A significant portion of the U.S. population is living in urban areas and settling in residential buildings even when evidence shows that they can afford to buy homes in suburban areas.\textsuperscript{46} Aside from renting units, studies show that rapid condominium construction is also predicted to continue in large cities.\textsuperscript{47}

The United States, as the world’s second largest emitter of GHGs,\textsuperscript{48} has recognized its contribution to the global problem.\textsuperscript{49} Within the

\begin{flushright}
\textsuperscript{37} See Nelson, supra note 18, at 3.
\textsuperscript{38} Id.
\textsuperscript{39} Id.
\textsuperscript{40} Id.
\textsuperscript{41} See id.
\textsuperscript{43} NMHC, supra note 42.
\textsuperscript{45} NMHC, supra note 42.
\textsuperscript{46} See id.
\textsuperscript{47} Dara K. Newman, Note, If You Can’t Build It, They Won’t Come: Condominium Construction Moratoria and Gentrification, 35 B.C. Envtl. Aff. L. Rev. 593, 595 (2008) (“[T]here is still rapid condominium construction underway and planned for the future in many large urban areas.”). In 2006, Boston’s planning agency projected that 14,000 condominium units were approved for construction and projected 1000 new units annually from 2006 through 2011. See id. at 596.
\end{flushright}
United States, green building development and growing housing demand in urban areas could significantly contribute to reductions in the nation’s contributions to climate change.\textsuperscript{50} According to some predictions, the overall green building market is expected to more than double from its estimated current level of “$36–49 billion to $96–140 billion by 2013.”\textsuperscript{51} Furthermore, the nation is likely to experience a change in demographics and housing preferences, which will result in less people settling in typical suburban homes and more people choosing to reside in cities.\textsuperscript{52} This increase in urban population is likely to result in increased real estate development.\textsuperscript{53} Consequently, as construction increases, the levels of U.S. GHG emissions may also increase if conventional buildings rather than greener buildings are constructed.\textsuperscript{54}

B. High-Rise Potential to Benefit the Environment

Urbanization and increased construction does not necessarily cause increased harms to the environment.\textsuperscript{55} Tall buildings may have potential advantages as well.\textsuperscript{56} For instance, tall buildings reduce urban sprawl.\textsuperscript{57} They have the capability to increase density and promote the development of efficient transit systems.\textsuperscript{58} Tall-building use also allows for the preservation of more open spaces because such buildings are constructed upwards as opposed to outwards.\textsuperscript{59} Most importantly, high-rise buildings allow for the use of fewer resources because residents share walls, pipes, and other materials, which can make the buildings more efficient.\textsuperscript{60}

\textsuperscript{50} See Bronin, supra note 17, at 245.

\textsuperscript{51} U.S. Green Bldg. Council, supra note 22, at 1; see also Matthew J. Parlow, Green-washed?: Developers, Environmental Consciousness, and the Case of Playa Vista, 35 B.C. Envtl. Aff. L. Rev. 513, 522 (2008) (“[A]ccording to a recent study, residential green building is expected to grow from $7.4 billion in 2005 to somewhere between $19 and $38 billion by 2010.”).

\textsuperscript{52} See NMHC, supra note 42.

\textsuperscript{53} See Black, supra note 42, at 1.

\textsuperscript{54} See Buildings and the Environment, supra note 27, at 6.


\textsuperscript{56} Id.

\textsuperscript{57} Id.

\textsuperscript{58} See id.

\textsuperscript{59} See id.

\textsuperscript{60} See id.
Green buildings can go a long way to curb wasteful energy consumption and to positively impact the global environment.\textsuperscript{61} The sustainable building has the potential for being a significant part of the global warming solution if techniques are implemented to reduce the impacts of the generation, transmission and consumption of energy and electricity; the harvest and transformation of raw materials into installed finished building products; the transportation and disposal of waste; and the consumption of fresh water.\textsuperscript{62} Evidence has shown that buildings are substantial contributors to overall GHG emissions, and our collective efforts to reduce these emissions could have a significant impact on global warming.\textsuperscript{63}

Advancing green high-rises may be one of the easiest ways to benefit the environment.\textsuperscript{64} The greening of real estate can be particularly important because emissions reductions are easier and can be achieved at a relatively affordable cost as compared with greening other industries.\textsuperscript{65} The extent to which developers incorporate green technology in building projects can have significant effects in solving the wider global impact on energy use and GHG emissions.\textsuperscript{66} Given the trends of urbanization, the key to mitigating buildings’ harmful environmental effects will be to take advantage of the current and potential technologies to reduce buildings’ impacts on the environment.\textsuperscript{67}

C. General Principles of Green Building and Design

Green building—also known as sustainable building or high performance building—is generally referred to as the practice of increasing building efficiency, and protecting and restoring human health and/or the environment.\textsuperscript{68} Building efficiency generally entails manag-


\textsuperscript{63} \textit{Id.}

\textsuperscript{64} \textit{See} Nelson, \textit{supra} note 18, at iv.

\textsuperscript{65} \textit{Id.}

\textsuperscript{66} \textit{See} Sinreich, \textit{supra} note 62, at 227.

\textsuperscript{67} \textit{See} Dawson et al., \textit{supra} note 33, at 17–18.

\textsuperscript{68} Frequent Questions, \textit{supra} note 4.
ing the use and harvest of energy, water, and materials.\textsuperscript{69} Protection of the environment and human health is usually accomplished through aspects related to the siting, design, construction, operation, maintenance, renovation, and deconstruction of buildings.\textsuperscript{70}

There are a number of ways that green building techniques try to reduce overall building impacts from resource consumption, managing waste, energy efficiency and building maintenance.\textsuperscript{71} The goal of green buildings is to diminish buildings’ effects on the environment and make them resource-efficient throughout their life-cycles.\textsuperscript{72} In order to reduce buildings’ impact on the environment and human health, green buildings may incorporate sustainable materials in their construction, create healthy indoor environments with minimal pollutants, and/or feature landscaping that reduces water usage.\textsuperscript{73}

When a variety of green building practices are implemented, their aggregate effects conserve natural resources and protect air and water quality.\textsuperscript{74} Utilizing sustainable practices addresses concerns of economy, utility, durability, and comfort. Green buildings have the potential not only to increase comfort and well-being, but help maintain healthy air quality.\textsuperscript{75}

II. Market Influence on Greening Future Real Estate Projects

A. Increased Market Demand and the Trend to “Go Green”

Global awareness of buildings’ environmental impacts has increasingly garnered the attention of the public and the real estate industry.\textsuperscript{76} The real estate industry is inescapably fettered with green building concerns, and green building has become the newest hot topic in construction circles.\textsuperscript{77} “Industry publications, conferences and popular press are suddenly filled with accounts of how developers can and are producing more environmentally-friendly ‘high-performance’ build-

\textsuperscript{69} Id.
\textsuperscript{70} Id.
\textsuperscript{71} See id.
\textsuperscript{72} See id.
\textsuperscript{74} See Build it Green, Building Design & Construction Overview, http://www.builditgreen.org/building-design-construction-overview/ (last visited May 13, 2010).
\textsuperscript{75} Id.
\textsuperscript{76} See Nelson, supra note 18, at i.
\textsuperscript{77} See id. at 4.
There are many testimonials in trade publications that tout the advantages of green buildings for residential projects. These materials constantly report on the new tidal wave of green building regulatory changes at every level of government, and the newest green building features that have been adapted somewhere in the global marketplace. Although the development of green building procedures has been escalating since the 1990s, it has increased at a startling speed, and it seems to have “reached a critical mass of awareness and action just in the past year.”

Real estate publications state that tenants are increasingly demanding green for a number of reasons. Corporate and government entities have sought to occupy green buildings in the face of higher energy costs. Corporations are also engaging in green projects because they seek favorable publicity and goodwill in the face of growing corporate accountability and disclosure of corporate practices. Their attempt at gaining favor in the public eye through green projects is referred to as the “halo effect.” Engaging in environmentally conscientious projects can be an important marketing tool for these firms.

However, despite the desire for a “green image,” building owners and tenants generally cite energy cost savings as the greatest benefit of green buildings. Energy savings can result in a particularly significant economic benefit. Studies show that green buildings save an average of 30% in reduced utility bills over conventional buildings. Energy reductions, emissions reductions and water conservation throughout the life of a green building have been estimated to result in savings at least ten times the amount of the initial investment. Although the most distinguishable economic benefit of green buildings is the savings

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78 Id. at i.
79 Circo, supra note 26, at 736.
80 See Sinreich, supra note 62, at 227.
81 Nelson, supra note 18, at i (article from 2007).
82 See id. at v.
83 See id. at iv. As owner-users of their facilities, they are better able to capture the benefits of green buildings as they are able to recoup construction costs with long-term energy savings. See id.
84 See id. at 11.
85 See id.
86 See id.; see also Global Green USA, supra note 25, at 19.
87 See Nelson, supra note 18, at iv, 6.
88 See id. at iv.
89 See id. at v. (noting that according to some estimates, this can equate to annual savings of $135,000 for a typical 200,000 square foot office building).
90 Bronin, supra note 17, at 246.
in energy costs, there are also other economic benefits. These benefits include the potential for lower insurance premiums, lower waste disposal fees, income from recycling, reduced water and sewer charges, lower replacement costs for building components, increased rentable square footage, and increased rental rates.

Aside from economic benefits, residential tenants seek green space for other reasons as well. “[A]ncedotal evidence suggests that some demand for green buildings is driven by normal tenant desires to have the newest, most prestigious space, as virtually all green buildings are new and most are built to superior construction standards.” Furthermore, status appeal drives the demand for green building condominiums. Numerous high-rise condominiums are popping up across the country, catering to the desires of the wealthy.

Finally, some evidence suggests that green buildings have positive impacts on health. Asthma and allergy attacks have been linked to indoor air pollutants. It is estimated that Americans spend 90% of their time indoors, and pollutants may be present indoors at rates two to five times higher than outdoors according to the Environmental Protection Agency (EPA). Some studies also suggest that indoor air quality improves the health and productivity of tenants and workers.

These benefits have resulted in an increased market demand for green buildings from homeowners, renters, and investors. Large corporations and the government are not the only pool of potential tenants for green building sites. Whereas most of the early green projects were largely sought by the government and corporate owner-users, “the pendulum has started to swing more to developers and smaller lessee tenants.”

91 See Sinreich, supra note 62, at 230.
92 Id.
93 Nelson, supra note 18, at 10–14.
94 Id. at v.
95 See Deneen & Howard, supra note 20, at 30.
96 See id. (describing amenities of one particular green high-rise in New York City).
98 See id. at 5.
99 See id. at 4–5; see also Deneen & Howard, supra note 20, at 30.
100 See Circo, supra note 26, at 738. Some studies have shown that improved ventilation can reduce respiratory illness by 9%–20% and enable faster recovery from illness. Deneen & Howard, supra note 20, at 31. Green buildings are also more conducive to contented, productive, and healthy workers. Nelson, supra note 18, at v.
101 See Nelson, supra note 18, at 9.
102 See id. at 9–10.
103 Id. at 9.
B. Market Demand Is Not Enough

Tenant demand for green buildings has not had enough of an impact to sufficiently promote the green building movement.\textsuperscript{104} Information on green building has been disseminated within communities since the early 1990s and yet, “green building cumulatively represents only a miniscule share of the country’s property inventory—certainly well under 1%, and only 2% of non-residential construction last year.”\textsuperscript{105}

Green building development has predominantly focused on the large-scale and commercial sectors of the real estate market despite evidence of increasing residential tenant demand.\textsuperscript{106} Generally, “green market potential is greatest for higher-value investment properties where tenants are willing and able to pay for prestige and benefit most from energy-expense reductions.”\textsuperscript{107} Apartments and hotels present strong greening opportunities, but particularly cater only to more upscale properties.\textsuperscript{108} Not all types of tenants have been able to find green building space because the market has focused on downtown offices followed by high-end suburban office complexes.\textsuperscript{109} Affordable green housing has been limited despite sufficient tenant demand.\textsuperscript{110}

Market forces and the increase in tenant demand alone have proven insufficient to change building practices.\textsuperscript{111} Even with so much compelling evidence of buildings’ impact and the potential to change the environment, “green buildings still account for only a minimal share of current construction.”\textsuperscript{112} Within the United States, there are only fifty cities that have more than one private-sector green building project.\textsuperscript{113} Fewer than twenty cities have more than three projects; therefore, in many cities few developers or investors can even point to a local green building.\textsuperscript{114} Although the benefits of green building have been extensively researched and studies have shown the detrimental effects that traditional buildings have on our environment, the commercial and residential real estate industries have not gone green.\textsuperscript{115}

\textsuperscript{104} See id. at v.
\textsuperscript{105} Id.
\textsuperscript{106} See Circo, supra note 26, at 756; Nelson, supra note 18, at 11.
\textsuperscript{107} Nelson, supra note 18, at ix.
\textsuperscript{108} Id.
\textsuperscript{109} See id.
\textsuperscript{110} See id.
\textsuperscript{111} See Circo, supra note 26, at 749.
\textsuperscript{112} See Nelson, supra note 18, at 26.
\textsuperscript{113} Id.
\textsuperscript{114} See id.
\textsuperscript{115} See id.
III. The Use of Regulation to Increase Green Design

As governments at all levels have started to intervene in order to promote green building, many questions have arisen in the development of government regulation. First, developers and regulators need to form a consensus as to what constitutes green building, and also agree upon applicable standards. Further, the debate continues as to whether the government should incentivize the market or mandate requirements in green building design based on those standards. Finally, disputes also exist over what level of the government should administer and oversee such regulation.

A. Defining Green Building: The Basics on LEED Standards

Regulation in sustainable design has centered on forming a consensus about the definition of green building. Though many guidelines and procedures exist, the U.S. Green Building Council’s (USGBC) Leadership in Energy and Environmental Design (LEED) standards have emerged as the leading benchmark in green design. Many government regulations at the federal, state, and local level incorporate LEED standards rather than the multitude of other green building rating systems that have been developed, making them the prevailing standards in green design.

LEED certification involves a rigorous third-party commissioning process that evaluates a building under given categories related to siting, water conservation, energy, materials, indoor environmental quality, and innovation and design. A building can earn points under each of these categories and, depending on the amount of points earned, may qualify the project to be designated at a certain LEED level. The LEED certification system offers four certification levels:

116 See Bronin, supra note 17; Circo, supra note 26, at 751–65; Nelson, supra note 18, at iv.
117 See Nelson, supra note 18, at iv.
118 See Circo, supra note 26, at 751.
119 See generally Bronin, supra note 17 (arguing that state regulation is preferable to regional and local regulation).
120 See Nelson, supra note 18, at iv.
121 See id.; see also Deneen & Howard, supra note 20, at 30.
123 See WHITE PAPER ON SUSTAINABILITY, supra note 10, at 8; LEED Certification Information, supra note 122.
124 See LEED Certification Information, supra note 122.
Certified (26 points), Silver (33 points), Gold (39 points) and Platinum (52 or more points).\textsuperscript{125}

The process of certifying a building under the LEED system involves several steps.\textsuperscript{126} A project is first registered with the USGBC and the project team assembles the data and documentation regarding which points under the rating system they intend to pursue.\textsuperscript{127} After the building is completed, the project team then submits to the USGBC the required documentation for the technical review process.\textsuperscript{128} The USGBC then reviews the building and assesses whether the building has complied with the requirements for attaining each point.\textsuperscript{129} After the review process, the USGBC tallies the points and confers an LEED rating—certified, silver, gold or platinum—based upon the number of total points the building earned during the inspection.\textsuperscript{130} The more green qualities a building attains, the more points a project earns, and the higher its certification level.\textsuperscript{131}

LEED standards as applicable to residential structures would examine aspects such as location of the building, proximity to public transport, availability of parking and bike racks, water filtering and efficiency, energy efficient projects, and incorporation of eco-friendly building material.\textsuperscript{132} The LEED checklist incorporates a variety of green building aspects from construction practices—such as whether local or recyclable materials are used—to the use of wood, carpeting, walls, floors, roofing and paints in buildings’ interior design.\textsuperscript{133} LEED also evaluates subsequent energy use through weatherizing, installing insulation, installing windows, sealing of heating and cooling ventilation ducts, upgrading heating and cooling systems, lighting, and installing automatic heating and cooling controls.\textsuperscript{134}

\textsuperscript{125} White Paper on Sustainability, supra note 10, at 8; LEED Certification Information, supra note 122.

\textsuperscript{126} See Sinreich, supra note 62, at 233.

\textsuperscript{127} Id. Developers may pick and choose the points of LEED that make sense to pursue for their given project. MacDonald, supra note 61.

\textsuperscript{128} Sinreich, supra note 62, at 233.

\textsuperscript{129} Id.

\textsuperscript{130} Id.

\textsuperscript{131} See id.


\textsuperscript{133} See Registered Project Checklist, supra note 132.

\textsuperscript{134} See Orien & Silver, supra note 3, at 37.
B. To Incentivize or Mandate?

Although the LEED standards have emerged as the foremost measurement of green building, governments have utilized them in differing ways.\(^{135}\) The government uses LEED to either: (1) incentivize the market through voluntary programs that reward developers who achieve minimum LEED standards or (2) mandate green building practices through LEED-based requirements.\(^{136}\) Accordingly, some government programs are “promulgating mandatory climate change regulations, and others are encouraging voluntary compliance by providing various incentives.”\(^{137}\)

The use of incentives or mandates has varied over time.\(^{138}\) In the early years of development, programs incorporating LEED standards tended to be incentive-based.\(^{139}\) Mandatory regulations mainly existed only for government-owned facilities but have increasingly permeated the commercial and private sectors.\(^{140}\) Most green building standards and designs are currently voluntary.\(^{141}\) A minority of cities at the forefront of promoting green building design require buildings to comply with sustainable building practices.\(^{142}\) Although governmental intervention has been growing throughout the country, many researchers and commentators have embraced the use of economic incentives while conveying considerable skepticism or resistance against mandatory green building regulations in the private sector.\(^{143}\) Environmentalists and developers agree that the government is already so extensively involved with green building initiatives that it will likely continue to play a significant role in the future, whatever type of involvement that may be.\(^{144}\)

1. Incentive-Based Programs

The purpose of passing incentive-based regulations is to encourage developers to use sustainable practices in their construction in order to

\(^{135}\) See Abair, supra note 1, at 625.

\(^{136}\) See id.

\(^{137}\) Orien & Silver, supra note 3, at 36.


\(^{139}\) See id.

\(^{140}\) See id.

\(^{141}\) Orien & Silver, supra note 3, at 37.

\(^{142}\) See Nelson, supra note 18, at 18.

\(^{143}\) Circo, supra note 26, at 761.

\(^{144}\) See id. at 750.
save costs or expedite the construction and permitting process.\footnote{145} An incentive-based approach rewards developers by offering tax credits, reduced permit fees, property tax reductions, density or floor area ratio bonuses, and/or parking reductions.\footnote{146} This approach makes it completely voluntary for developers to abide by LEED standards, giving them total discretion whether to adopt the standards.\footnote{147}

Market incentives play an important role in encouraging the adoption of green building practices.\footnote{148} Since “economic factors are likely to control project design decisions, [incentives] are often extremely powerful in changing the behavior of the stakeholders.”\footnote{149} For this reason, incentive-based supporters argue that government programs must “ensure that suitable economic signals are sent to the building sector, creating market conditions that provide quantifiable economic advantages to buildings that are built and operated so as to achieve energy efficiency.”\footnote{150} Incentives offset market failures by giving developers the means to recoup their initial costs through government funding.\footnote{151}

The main argument in favor of an incentive-based approach is that LEED standards adopted by the federal, state, or local government remain voluntary and thus do not discourage potential business development.\footnote{152} In theory, dangling rewards in front of developers, such as supplementing green funding and saving time on construction permitting, would create the necessary enticement to build green without deterring potential developers that would choose not to engage in sustainable design.\footnote{153} Jurisdictions that offer sufficient incentives would encourage developers to build green without hindering non-sustainable real estate development.\footnote{154}

\begin{footnotes}
\item[145] See Abair, \textit{supra} note 1, at 626–27; Orien & Silver, \textit{supra} note 3, at 37.
\item[146] \textit{Global Green USA, supra} note 25, at 19; see Abair, \textit{supra} note 1, at 626–28.
\item[147] See Abair, \textit{supra} note 1, at 626–27.
\item[148] See Circo, \textit{supra} note 26, at 752.
\item[149] Id. at 752–53.
\item[150] Id. at 753.
\item[151] See \textit{Global Green USA, supra} note 25, at 19; Abair, \textit{supra} note 1, at 627.
\item[152] See Sussman, \textit{supra} note 29, at 14.
\item[154] See Sussman, \textit{supra} note 29, at 14.
\end{footnotes}
Many programs across the country have implemented incentive-based programs that have succeeded in stimulating green development projects.\(^{155}\) The tax incentive paradigm offered by New York State is the most notable.\(^{156}\) New York was the first state to pass voluntary tax credit legislation targeting the private sector.\(^{157}\) The real estate market in New York City has responded promisingly to this approach.\(^{158}\) There has been particular growth in the market for green luxury condominiums.\(^{159}\) Real estate developers in New York City appear willing to cater to luxury tastes for eco-friendly living because of incentive-based regulation.\(^{160}\)

Critics argue that the incentives are not significant enough to advance sustainable building practices in most markets.\(^{161}\) They contend that the high costs of complying with LEED standards are not offset by the rewards offered by the government.\(^{162}\) Even with incentives, critics also argue that developers still do not opt for green projects because of the widespread misperception that green buildings are more expensive to design and build.\(^{163}\) Developers argue that abiding by LEED often involves obtaining hard to find materials or creating cutting-edge designs.\(^{164}\) They argue that the government will be burdened because of the large incentives it would have to offer to entice developers to com-

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\(^{155}\) See Circo, supra note 26, at 756, 759–61. Seattle and New York use incentive programs to encourage green development in the residential sector. See id. “[Seattle’s] efforts to support green building standards in the residential market include awards and education programs as well as incentive funding for soft costs similar to its support for LEED certification for commercial projects.” Id. at 759.

\(^{156}\) See N.Y. Tax Law § 19 (McKinney 2009). New York’s attitude toward eco-friendly construction has been to adopt legislation that provides incentives for developers to voluntarily adopt sustainable building practices. See New York Incentives, supra note 153; New York Senate Press Release, supra note 30.

\(^{157}\) See MacDonald, supra note 61.

\(^{158}\) See Steve Cutler, Green Buildings, N.Y. LIVING MAG., Mar. 2007, at 40, 40. New York City also incentivizes green building by annually awarding a highly publicized green building award at an event that it sponsors. Sussman, supra note 29, at 18–19.


\(^{160}\) See McLinden, supra note 159, at 46; Gross, supra note 159, at 48.

\(^{161}\) See, e.g., Circo, supra note 26, at 780.

\(^{162}\) See id.

\(^{163}\) See Kevin L. Ratner, Los Angeles Takes Big Step Toward Sustainable Living, L.A. BUS. J., Apr. 28, 2008, at 47, 47.

\(^{164}\) See GLOBAL GREEN USA, supra note 25, at 2; see also Nelson, supra note 18, at 22 (stating that it is unnecessary to utilize all available sustainable technologies to qualify as green).
ply with LEED.\textsuperscript{165} They further argue that mandating the standards is a preferable approach.\textsuperscript{166}

Although government requirements that mandate green building for public and commercial projects are increasing, incentive-based regulation remains the prevailing method used to target private-sector residential buildings.\textsuperscript{167} Many governments have opted to provide tax incentives, grants, or streamlined permitting processes to make green building options appealing to developers in the private sector.\textsuperscript{168} Despite these incentives, evidence shows that only 5% of buildings are green.\textsuperscript{169} Critics therefore argue that incentive-based programs and a market approach fail to sufficiently encourage green building.\textsuperscript{170} Research conducted by the U.S. Department of Energy concluded that although a higher number of state-level policies correlates with faster market growth, “financial incentives do not stimulate markets on their own.”\textsuperscript{171}

2. Mandatory Regulation

The alternative to the incentive-based approach is the incorporation of LEED standards by the government in mandatory regulations.\textsuperscript{172} Jurisdictions typically incorporate green building by amending their building codes and ordinances to incorporate sustainable standards.\textsuperscript{173} As states focus on strategies to reduce GHG emissions, “[s]ome states are seeking to make aspects of their voluntary programs mandatory.”\textsuperscript{174} As opposed to incentive-based programs, adopting mandatory LEED-based regulations would not give developers the choice of whether to comply with LEED standards.\textsuperscript{175} Most regulatory programs require that new projects of a certain size—typically large-scale projects over 50,000 square feet—must comply with LEED standards.\textsuperscript{176} However, the appli-
cability of the LEED standards to new construction projects versus existing structures differs drastically at the federal, state, and local levels.\textsuperscript{177}

The applicability of LEED regulations may vary depending on how a building is categorized.\textsuperscript{178} Typically, government programs categorize construction projects by new construction as opposed to existing structures, as well as being categorized as government, commercial, or private-sector projects.\textsuperscript{179} Most regulation focuses on new construction because of the high costs associated with updating old buildings.\textsuperscript{180} Furthermore, the focus of mandatory compliance with LEED standards has also centered on government-owned or government-funded projects.\textsuperscript{181} Many cities have recently pushed to extend the standards in the commercial sector as well.\textsuperscript{182} However, few regulatory mandates have been issued in the private sector, especially for residential projects.\textsuperscript{183} Although existing programs are important steps, some argue that “sustainability in building construction ultimately requires that the private sector comprehensively adopt green building standards.”\textsuperscript{184}

Proponents of mandated regulation contend that in order for green building to be practiced, mandatory compliance for developers is necessary.\textsuperscript{185} They point to market failure and the lack of green buildings despite government incentives as evidence that in order to make green building a reality, LEED must become mandatory.\textsuperscript{186} They claim that incentives to adopt LEED are not large enough and argue that to grant larger incentives would unduly burden government resources.\textsuperscript{187} Mandated regulation supporters recognize that although “economic instruments carefully designed to work with market forces are often effective. . . direct regulation may be essential in the face of market failures or in light of institutional and historical factors.”\textsuperscript{188}

\begin{itemize}
\item \textsuperscript{177} \textit{See} White Paper on Sustainability, \textit{supra} note 10, at 20–25.
\item \textsuperscript{178} \textit{See} Abair, \textit{supra} note 1, at 625; LEED Certification Information, \textit{supra} note 122; U.S.\textsuperscript{179} Envtl. Prot. Agency, Building Types, http://www.epa.gov/greenbuilding/pubs/building\textsuperscript{179} types.htm (last visited May 13, 2010).
\item \textsuperscript{179} \textit{See} Abair, \textit{supra} note 1, at 625; LEED Certification Information, \textit{supra} note 122.
\item \textsuperscript{180} \textit{See} Nelson, \textit{supra} note 18, at 33.
\item \textsuperscript{181} \textit{See} Abair, \textit{supra} note 1, at 626; Circo, \textit{supra} note 26, at 756.
\item \textsuperscript{182} \textit{See} Nelson, \textit{supra} note 18, at viii.
\item \textsuperscript{183} \textit{See} Circo, \textit{supra} note 26, at 756.
\item \textsuperscript{184} \textit{Id.} at 754.
\item \textsuperscript{185} \textit{See id.} at 749; Deneen & Howard, \textit{supra} note 20, at 34.
\item \textsuperscript{186} \textit{See} Circo, \textit{supra} note 26, at 764; Deneen & Howard, \textit{supra} note 20, at 34; Doris, \textit{supra} note 171.
\item \textsuperscript{187} \textit{See} Circo, \textit{supra} note 26, at 779–80.
\item \textsuperscript{188} \textit{Id.} at 764.
\end{itemize}
“would seem to present the most direct means to achieve green building standards.”

Proponents of mandating green building programs also argue that one of the biggest impediments to the adoption of mandatory sustainable regulation is the misperception that LEED certified buildings cost more to design and build. So far, residential developers have lagged behind commercial developers in their effort to obtain LEED ratings, in part because of this perception. However, “there should not be significant incremental cost involved in designing and building a high rise office or residential building” due to the availability and advancement of green technology. In fact, some experts contend that a 15% savings in energy expenditures could cost only nickels and dimes per square foot and lead to millions of dollars in additional asset value. Although estimates show that greener buildings can cost 2% to 5% more than conventional buildings, these initial costs are recouped in energy savings over the life of the building. Furthermore, where green measures are considered early and fully integrated into the building design, there may be no increased cost at all. The earlier sustainable design is incorporated into the plan, the more likely it is that the project’s costs will be similar to those of conventional buildings. Data also shows that—as green building becomes standardized and more green buildings become prevalent—the incremental costs, if any, of green building will further decrease. As the market continues to expand, the options and availability of green materials increases, and the cost for these materials will decline.

Another argument for mandated regulation is the immediate need to mitigate health and environmental risks. Supporters argue for

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189 Id. at 732.
190 See Bronin, supra note 17, at 245; MacDonald, supra note 61; see also Global Green USA, supra note 25, at 2.
192 Sinreich, supra note 62, at 229.
193 Id.
194 See Circo, supra note 26, at 738.
195 See Global Green USA, supra note 25, at 2; Nelson, supra note 18, at 22.
196 See Global Green USA, supra note 25, at 2; Nelson, supra note 18, at 22.
197 See Sinreich, supra note 62, at 233.
198 See id. Furthermore, recycling options are expanding and developers and tenants are integrating sustainability earlier so that they are no longer wasting money on re-doing construction that they have already paid for. See id.; see also White Paper on Sustainability, supra note 10, at 31 (“[T]he cost of green building is coming down, as project teams become more experienced in sustainable development and the cost of green products, components, and materials come down.”).
199 See Circo, supra note 26, at 765; Dawson et al., supra note 33 at 7–9.
mandatory regulation “simply because greater compliance with green building standards significantly serves the public health and welfare.”\textsuperscript{200} Some contend that environmental risks and climate change are so serious that ignoring the need to effectively and comprehensively regulate the private sector would be irresponsible.\textsuperscript{201} The data showing the escalating harms to the environment is evidence that timely and flexible regulation is necessary to be effective in the varying geographic conditions across the country.\textsuperscript{202}

Critics argue, however, that developers will punish municipalities and states that mandate LEED compliance by choosing to develop projects elsewhere.\textsuperscript{203} They claim that developers will choose to build in cities and regions where LEED is voluntary and they can keep construction costs down.\textsuperscript{204} Some commentators suggest that many cities do not know how to utilize green building technology because they lack trained and experienced experts.\textsuperscript{205} Furthermore, they contend that the current markets for products, designers, experts, and materials are not developed enough to support green development.\textsuperscript{206} In sum, critics argue that mandating green design will only make construction prohibitive, resulting in losses in the residential markets of localities that mandate green building.\textsuperscript{207}

Another criticism of mandated regulation, especially in the case of private development, is that mandatory regulation is too draconian of an approach, given the freedoms and property interests of private land owners.\textsuperscript{208} Private land interests are thus pitted against environmental interests in the debate over how much regulation should be imposed, especially in the private sector.\textsuperscript{209} Regulation of government-owned facilities has been less problematic than privately held land which historically has been given more protection.\textsuperscript{210} Critics argue that regulation for private land owners imposes on their rights.\textsuperscript{211} However, courts have

\textsuperscript{200} Circo, supra note 26, at 762.
\textsuperscript{201} See, e.g., id. at 765.
\textsuperscript{202} See id.
\textsuperscript{203} See Sussman, supra note 29, at 14.
\textsuperscript{204} See id.
\textsuperscript{205} See Nelson, supra note 18, at vii.
\textsuperscript{206} See id. at x.
\textsuperscript{207} See Circo, supra note 26, at 750 (“[W]ell-intentioned governmental interference in the marketplace may produce seriously problematic and unintended consequences.”).
\textsuperscript{208} See Circo, supra note 26, at 745–48; Newman, supra note 47, at 602–04 (discussing police power as applied to privately owned property).
\textsuperscript{209} See Circo, supra note 26, at 745–48.
\textsuperscript{210} See Bronin, supra note 17, at 236–38; Circo, supra note 26, at 745–48.
\textsuperscript{211} See Bronin, supra note 17, at 236–38; Circo, supra note 26, at 745–48.
interpreted the state police power to suggest that regulations could be passed even for private land.212 Under the police power, states can enact regulations as long as those regulations relate to the health, safety, or general welfare of the public.213

Within the last two years, many municipalities have created successful programs that amended building and land use ordinances to mandate LEED-minimum building standards.214 Boston was the first city in the nation to adopt LEED-minimum standards that would be applicable to the private sector.215 Following Mayor Menino’s convening of a Green Building Task Force, the Task Force recommended that to foster an increase in green building, the city should adopt LEED standards that would apply to city-sponsored development as well as large-scale private projects.216 Mayor Menino further stated that he encountered little resistance from developers and architects, many of who embrace the new standards.217 Thus the threat of hindering development and scaring off potential business by adopting a regulatory program for Boston was not seen as a significant concern in making LEED mandatory.218 In fact,

Preliminary results indicate significant public support for green building practices. Moreover, there has not yet been any evidence that even the most progressive green building

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212 See Newman, supra note 47, at 603–04.
213 See id. at 604.
217 Katie Zezima, Boston Plans to Go “Green” on Large Building Projects, N.Y. TIMES, Dec. 20, 2006, at A18. Boston’s program makes LEED certification mandatory for all buildings larger than 50,000 square feet regardless of whether it is a government, commercial, or private building. See art. 37; Swing, supra note 215, at 33; David Hancock, Boston’s Green Building Requirements 1–2, http://www.naiopma.org/DV/Pages/images/Permitting/HANCOCK_GREEN_BUILDING.pdf (last visited May 13, 2010).
218 See Zezima, supra note 217.
programs will repel economic development. Developers continue to build in places like Seattle, Boston, and Chicago because demand remains strong due to the attractive location, demographics, economic activity, and image of each of these places.\(^\text{219}\)

California is the clear leader in the green building movement because it is home to numerous municipalities that have enacted some of the strictest green building regulations in the country.\(^\text{220}\) “California has long had the nation’s most energy-efficient building standards” and California is seen as “a hotbed” of sustainable development because of its state-mandated building goals.\(^\text{221}\) California is the first state in the nation to approve state-wide green building standards.\(^\text{222}\) The statewide regulation “requires that all new construction—from commercial buildings to homes, schools and hospitals—reduce energy usage by 15 percent, water use by 20 percent and water for landscaping by 50 percent.”\(^\text{223}\) Los Angeles has passed legislation that enacts tighter green building standards than those adopted by the state in order to change the city’s image of choking smog and fuel-burning gridlock.\(^\text{224}\) The ordinance requires that privately built projects over 50,000 square feet must be 15% more energy efficient than current California code standards.\(^\text{225}\) San Francisco is considered to have the toughest green building plan of any major U.S. city.\(^\text{226}\) The city’s standards require that commercial buildings and high-rise residential buildings must be LEED Certified, and as of this year, they must achieve LEED Silver.\(^\text{227}\) For large


\(^{220}\) \textit{See White Paper on Sustainability, supra} note 10, at 31.

\(^{221}\) Roosevelt, \textit{supra} note 214; \textit{see White Paper on Sustainability, supra} note 10, at 31.


\(^{223}\) \textit{Id.}.

\(^{224}\) \textit{See Going Green, supra} note 25; Roosevelt, \textit{supra} note 214.

\(^{225}\) Ratner, \textit{supra} note 163, at 47.


commercial buildings, the city requires LEED Silver certification, and will require LEED Gold in 2012.228 San Francisco Mayor Gavin Newsome has testified before Congress that the response to the city’s regulations was overwhelming: more developers lined up to build green buildings than conventional ones.229

C. What Level of Government Should Implement Regulations?

In addition to the incentive versus mandatory approach, another area of contention is over the governmental level through which regulations should be implemented: federal, state, or local.230 Across the country, there are a variety of green building programs being adopted at the state and local levels.231 Legislation and regulations on the federal level have been limited.232 To date, there is no uniform federal regulation demanding minimum standards for building construction beyond those for government-owned or government-sponsored projects.233 Most of the mandatory regulations have developed at the local, city level.234

Cities and municipalities may be more adept at monitoring and regulating construction and building projects through local land use

228 See id.
230 See Bronin, supra note 17, at 231.
231 See Roosevelt, supra note 214 (reporting that over 120 municipalities have adopted green standards); Yi, supra note 222; see, e.g., BOSTON, MASS., ZONING CODE art. 37 (2007); BOSTON, MASS. ZONING CODE art. 80 (1996); N.Y. CITY, N.Y., LOCAL LAW NO. 86 (2005).
232 See, e.g., 42 U.S.C. § 15822 (2006); 10 C.F.R. § 435 (2009); see also FEMP Federal Requirements, supra note 26 (listing various green building regulations that apply to federal buildings).
234 See Sussman, supra note 29, at 5.
The organizations required to oversee projects have already been established at the local level because land use, construction, and permitting have historically been left to municipalities to oversee. Although enforcing regulations at the state and federal level may lead to more expansive use of green building practices, critics suggest that the proper state and federal agencies do not exist to enforce regulations. Municipalities are much more likely to already have the structure and agencies to oversee proper implementation of green building practices because most permitting and construction approval is already done through local requirements and city zoning boards.

The adoption of green building practices may vary from state to state—and even regionally—due to climate and atmospheric conditions. Programs are typically developed at the local level because of the idea that effective green building programs should be relevant to the types of buildings and construction activities that are typical for a specific city. Local programs are more tailored to projected development patterns and activity that may vary greatly depending on location. Varying climate conditions between states complicates adopting federal standards because of seasonal and temperature differences. Even within states, cities may drastically differ in terms of climate conditions making state-wide regulations problematic. Therefore adopting building standards at the state, regional, or federal level may sometimes be problematic because of the varying conditions specific to different building sites.

The availability of green materials may also make federal and state-level regulations problematic. Larger cities with more advanced green building markets may be able to abide by state-wide standards.

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235 See Bronin, supra note 17, at 236–38.
236 See id. at 235–36.
237 See id. at 264.
238 See id. at 236, 265.
240 See Global Green USA, supra note 25, at 17; Bronin, supra note 17, at 238.
241 See Bronin, supra note 17, at 238, 262 (“Congress, ruling from Washington, D.C., has little understanding of the myriad site-specific issues considered by tens of thousands of localities.”); see also Global Green USA, supra note 25, at 9.
243 See id.
244 See Global Green USA, supra note 25, at 9; Bronin, supra note 17, at 238, 262.
245 See Nelson, supra note 18, at x.
more easily than smaller townships with less developed agencies and markets for green building supplies. An increase in the availability of green materials and a decrease in their costs would help the green market develop. As the market expands, the likelihood that state- and federal-level regulations will be implemented increases.

Finally, the variety of different green building rating programs is one reason critics say green building has not developed on a national level. Although LEED standards have been used most in city and state regulations, there are a variety of other green rating systems. The National Association of Home Builders has developed its own system which often competes with the USGBC’s LEED standards. Governments also formulate their own programs which utilize aspects from varying rating systems. With such variety, being certified as “green” can mean different things depending on the certification program used and in what city the project is located.

IV. Extending Mandatory Regulation for Residential Structures

A. The Implications of Environmental Impact and Urbanization

Given the environmental impacts of buildings and the prevalence of residential structures within the real estate market, regulation should be expanded to cover residential buildings. Evidence shows an alarming increase in the harmful effects of the building industry both globally and within the United States. Environmental impacts may occur and may often be regulated at the local level, but they have far-reaching effects on a global scale. Ignoring the environmental impact of buildings can pose serious environmental risks. The combina-

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246 Id.; see Bronin, supra note 17, at 259 (“Underfunded and understaffed, local land use departments may not have the manpower or resources to address green-building innovations.”).
247 See Sinreich, supra note 62, at 233.
248 See, e.g., Bady, supra note 233, at 70.
249 See id.
250 See id.
251 See id.
252 See id.
254 See supra note 25 and accompanying text.
255 See Sinreich, supra note 62, at 227.
256 See Dawson et al., supra note 33, at 7–9.
tion of buildings’ harmful effects with the trends of increased urbanization and urban real estate development means that inactivity and indifference could have increasing negative impacts on the health of the global environment.257

Regulations should no longer ignore the private sector of the real estate market because it accounts for a large portion of overall building construction.258 Residential buildings make up a significant share of the real estate market and are rarely the target of any mandatory regulation.259 Within the United States, government regulation at all levels has concentrated on large-scale commercial projects.260 Because a significant portion of overall construction is comprised not only of commercial projects, but also of large-scale private residential projects, residential structures should be incorporated into overall building regulation.261 If studies showing the immediacy of mitigating environmental problems are true, then in order for sustainable building to have a significant impact, residential buildings must be included in the regulatory scheme.262 For regulations to significantly impact the global environment, whatever government action is being promoted to mitigate buildings’ harmful effects should target all buildings, including residential structures.263

Although awareness of green building practices is growing, the market alone is unlikely to promote sustainable building practices at the level necessary to significantly impact the environment.264 Market demand suggests that government projects, large corporations, and luxury properties are the most common tenants and owners of green structures.265 However, the residential sector of the real estate market has sufficient tenant demand but limited availability of affordable green spaces.266 To encourage developers to fill this void, government intervention is a necessary catalyst to the green building movement.267

257 See id.; see also Nelson, supra note 18, at 3.
258 See Buildings and the Environment, supra note 27, at 1–2; Bronin, supra note 17, at 253 ("Failure to contemplate green technologies can itself hinder their utilization.").
259 See Buildings and the Environment, supra note 27, at 1.
260 See supra Part III.B.
261 See Buildings and the Environment, supra note 27, at 1.
262 See Circo, supra note 26, at 765.
263 See id.
264 See supra Part II.B.
265 See Nelson, supra note 18, at 9.
266 See id. at ix, 9.
267 See Circo, supra note 26, at 750, 754.
B. Addressing the Critics

Incentive-based programs have had some success in certain real estate markets. Although the incentive-based approach may entice some developers to adopt LEED standards, there has been little to no increase in the overall amount of green building projects even when states and localities have offered these incentives to developers. The failure of incentive programs to adequately promote sustainable building projects, especially in those localities where green markets are less developed, suggests that additional government action is needed in order to achieve more widespread use of sustainable building practices.

Successful mandate-approach programs across the country, like those of Boston and San Francisco, challenge the argument from critics of mandatory regulation that mandatory regulations will turn away potential development. The implementation of mandatory regulation in these cities has not resulted in less development. In fact, both Mayor Menino and Mayor Newsome have reported that developers responded positively to the new sustainable building regulations. After an in-depth study of the market, the Boston Task Force recommended that mandatory requirements should, in fact, be implemented, showing that mandatory programs may be more useful in failing markets than incentive programs.

The argument that the government would have to offer larger incentives that would be burdensome to government resources in order to entice developers may rest on misperceptions about green building. This argument relies on the notion that green buildings’ incremental costs are significantly higher than conventional buildings. While in the past the costs for the construction of sustainable buildings may have been much higher than those for the construction of conventional buildings, the advancement in technology and availability of sustainable materials has narrowed this difference in costs. That green buildings currently cost 2% to 5% percent more than conventional buildings

268 See supra notes 155–56, and accompanying text.
269 See Orien & Silver, supra note 3, at 37.
270 See Circo, supra note 26, at 749, 754.
271 See id. at 781; Coile, supra note 229.
272 See Circo, supra note 26, at 781; Coile, supra note 229.
273 Coile, supra note 229; Zezima, supra note 217.
275 See Global Green USA, supra note 25, at 2; Nelson, supra note 18, at 22.
276 See Global Green USA, supra note 25, at 2; Nelson, supra note 18, at 22.
277 See Sinreich, supra note 62, at 233; see also White Paper on Sustainability, supra note 10, at 31.
demonstrates that government incentives do not necessarily have to be overwhelmingly significant, especially in light of the fact that if sustainable design is incorporated early there may not even be any additional cost.\textsuperscript{278} On the other hand, the small cost difference between conventional and green buildings also means that mandating green building practices should not result in any significant burden to developers.\textsuperscript{279}

Regulation is the most direct way to implement green building construction.\textsuperscript{280} Awareness and demand of green building techniques are available and yet the market has failed to promote sustainable building practices.\textsuperscript{281} The stagnancy of green building development despite incentives and demand indicates that the most effective way to make green building practices a reality is to mandate them through government regulation.\textsuperscript{282} Mandating green building regulations would give developers no alternative but to abide by the government’s choice of sustainable building practices. Whatever the reasons for market failure or the failure of incentives to entice developers, mandatory regulations will ensure that green building will expand.\textsuperscript{283}

\section*{C. Effects of Mandatory Regulation}

Implementing regulation does not call for a militaristic or draconian enforcement of green building principles. Requiring developers to follow minimum standards does not need to substantially burden the real estate market as long as the regulations remain flexible.\textsuperscript{284} Critics of green building are misled by the notion that developers, in order to qualify as a green building, must use only the best and newest natural materials that will substantially increase their construction costs.\textsuperscript{285} As evidence has shown, green buildings typically cost only 2\% to 5\% more than conventional ones and by no means call for the most innovative, hard to find, or cutting-edge materials.\textsuperscript{286} Buildings may qualify as green
without having to incorporate materials that would be significantly burdensome to acquire.\textsuperscript{287} Green building is achievable at little to no additional cost as long as green building plans and techniques are implemented early in the construction process and can be accomplished with the use of common materials that are increasingly easier to find.\textsuperscript{288}

A call to introduce mandatory regulations does not mean that the government necessarily eliminates the financial incentives it has offered developers.\textsuperscript{289} The interaction of both incentives and regulation can work together to promote green building.\textsuperscript{290} When “legislative findings indicate that a green building practice strikes the appropriate balance between present and future generations, mandates should not be taboo.”\textsuperscript{291} In jurisdictions where incentives have proven successful at fostering sustainable building practices, those incentives should stay in place.\textsuperscript{292} However, when such incentives fail, minimum mandatory regulations should be implemented to support green building.\textsuperscript{293}

Waiting for markets to develop or waiting to conduct more research on how to best combine regulations with incentives will do little in the meantime to decrease environmental harms or foster green development.\textsuperscript{294} Governments should foster green building regulation because building and construction practices have been shown to be one of the nation’s most significant contributors to environmental harms.\textsuperscript{295} Impacting the nation’s contribution to the problem thus “requires that the private sector comprehensively adopt green building standards.”\textsuperscript{296}

Moreover, a mandatory approach that regulates the residential sector will ensure that future residential projects are built green.\textsuperscript{297} Green building practices should expand beyond commercial and government-owned facilities.\textsuperscript{298} Commercial developers and the government have been important actors in increasing the green market, re-

\textsuperscript{287}See Nelson, supra note 18, at 22.
\textsuperscript{288}See id.
\textsuperscript{289}See Circo, supra note 26, at 765.
\textsuperscript{290}See id.
\textsuperscript{291}See id. at 780.
\textsuperscript{292}See id. at 752–53.
\textsuperscript{293}See id. at 754.
\textsuperscript{294}But see id. at 779 (“We cannot now identify all the best strategies . . . to refocus the national dialogue. As a first step, the government must provide support to bridge the critical research gap concerning effective sustainable design and building practices.”).
\textsuperscript{295}See Frequent Questions, supra note 4.
\textsuperscript{296}Circo, supra note 26, at 754.
\textsuperscript{297}See Abair, supra note 1, at 628–29.
\textsuperscript{298}See Circo, supra note 26, at 754.
sulting in an increased availability of sustainable building materials.\footnote{299}{See Nelson, supra note 18, at vi.} Green materials should now be incorporated in the construction of residential structures. In addition to improving global air quality, residential buildings would have the added effect of health benefits of improved air quality that not only increases employee productivity rates but may also result in improvements to overall tenant health in the workplace and in the home as well.\footnote{300}{See Buildings and the Environment, supra note 27, at 5.}

**Conclusion**

Given the impact that buildings have on the environment, increased regulation to mitigate buildings’ harmful effects is necessary. Transport-related industries are already heavily regulated due to their impact on the global environment. Buildings are one of the nation’s greatest GHG contributors; therefore, government intervention in this sector is also essential to mitigate their harmful environmental effects.

The overall regulatory scheme should incorporate residential buildings. Although many existing regulations apply to large-scale government and commercial projects, residential structures represent a significant portion of the real estate market. The trend for future urbanization will likely generate increased construction and development in the residential real estate sector. Thus, mitigating residential buildings’ harmful effects may considerably contribute to reducing the real estate sector’s overall global impact on climate change and other environmental challenges.

Market forces and incentive-based programs operating alone have failed to result in increased green building projects. Urban tenant demand and the availability of both technology and sustainable materials exist but have not enticed developers to pursue green projects.

Governmental mandates are the necessary catalyst to ensure that developers take advantage of the green technology that is currently available. Mandating green practices is the most direct way to promote sustainable practices and mitigate the effects of buildings on the environment. This approach is not likely to hinder real estate development or deter developers from pursuing new development in jurisdictions that require sustainable design and construction. Meeting green design requirements is no longer an overbearing task. Complying with green design results in little incremental cost when compared to the construction of conventional buildings as long as sustainable building proce-
dures are integrated early in the design process. The rewards of green building and the decline in green building cost suggest that if we are to take global warming and other environmental challenges seriously, then mandating green design in areas like the residential sector is a necessary step to solving the wider global problems.
THE “INTERIOR” REVENUE SERVICE:  
THE TAX CODE AS A VEHICLE FOR  
THIRD-PARTY ENFORCEMENT OF  
CONSERVATION EASEMENTS  

DOUGLAS M. HUMPHREY*  

Abstract: Conservation easements are increasingly popular. They protect undeveloped land by removing the development right from the landowner’s “bundle of sticks” and giving it to the party holding the easement. These easements confer a public benefit by protecting undeveloped land, dedicating it to use as a park, or preserving its ecosystem services. The Internal Revenue Code (the Tax Code) recognizes the public benefit, offering tax incentives for their donation to qualified organizations. However, the public does not have a vehicle to enforce the easements’ terms. Standing to enforce an easement is generally limited to the parties to the easement and, in some instances, the state attorneys general. This Note proposes a vehicle for collateral enforcement through the Tax Code. It proposes a citizen suit against the Commissioner of Internal Revenue for approving income tax deductions for conservation easements as a way to ensure an easement is beneficial to the public.  

Introduction  
Conservation easements have become very popular land preservation tools, particularly among the land trust community. As of 2005, there were over 1667 private land trusts operating in the United States collectively holding conservation easements that preserve over 6.2 million acres. The use of conservation easements has grown over the past


fifteen years, with steady increases in the annual rate of conservation.³ Between 1995 and 1998, land trusts encumbered an average of 165,000 acres annually through conservation easements.⁴ The average rose to 600,000 acres annually for 1999 and 2000.⁵ In 2001, 2002, and 2003, land trusts and similar organizations received or bought easements encumbering an average of 825,000 acres per year.⁶ Between 2000 and 2005, land trusts preserved 3.7 million acres, representing a 148% increase in the total acreage encumbered over the five-year period.⁷

Beginning with a revenue ruling in 1964, the Internal Revenue Service (IRS) recognized charitable deductions for conservation contributions.⁸ The plain language of the Tax Reform Act of 1969 seemed to prohibit any deduction for contributions of partial interest;⁹ however, Congress intended “that a gift of an open space easement in gross is to be considered a gift of an undivided interest in property where the easement is in perpetuity.”¹⁰ Congress clarified the requirements for a deduction through a series of amendments between 1976 and 1980.¹¹ For gifts made between 2006 and 2009, an easement donor may deduct the value of the easement up to fifty percent of her adjusted gross income for the current taxable year and for each of the next fifteen years or until the deductions exhaust the easement’s value.¹² Congress allowed these enhanced incentives to lapse.¹³ Currently, the donation of

⁴ Id.
⁵ Id.
⁶ Id.
⁷ See 2005 Land Trust Report, supra note 2, at 8 fig.2. Easements significantly outnumber other conservation tools. Id. In 2005, land trusts owned only 1.7 million acres, but they held conservation easements encumbering 6.2 million acres. Id.
¹² 26 U.S.C. § 170(b)(1)(E) (2006); see infra Part II.B.
¹³ See § 170(b)(1)(E)(vi) (noting that the provision terminated on January 1, 2010). Congress is likely to extend the incentives, retroactive to January 1, 2010. See Maryland Environmental Trust, Tax Benefits of Donating a Conservation Easement, http://www.dnr.state.md.us/met/taxbenefits.html (last visited May 13, 2010). In fact, legislation is pending
a conservation easement qualifies for an income tax deduction up to thirty percent of the value of a donor’s adjusted gross income.\textsuperscript{14} The donor can carry forward the value of the easement donation for each of the next five years or until the deductions exhaust the value of the easement.\textsuperscript{15}

Given the public investment in foregone revenue and the environmental benefit at stake in land conservation, many commentators have made arguments supporting third-party standing to enforce conservation easements.\textsuperscript{16} This Note takes an alternative approach that focuses on the income tax deductions available under § 170(h) of the United States Internal Revenue Code.\textsuperscript{17} This Note argues that an aggrieved third party can enforce a conservation easement collaterally by suing the Commissioner of Internal Revenue (Commissioner) under 5 U.S.C. §§ 702 and 704 for unlawfully approving an income tax deduction under 26 U.S.C. § 170(h).\textsuperscript{18} The plaintiff would bring suit for an order requiring the Commissioner to find a deficiency in the taxpayer’s income tax return.\textsuperscript{19} Tax incentives for conservation contributions are major factors for many property owners;\textsuperscript{20} challenging the owners’ income tax deductions can provide a way to ensure that conservation easements further legitimate conservation purposes that provide substantial public benefits.\textsuperscript{21}

I. CONSERVATION EASEMENTS AND THIRD PARTY STANDING

A. Conservation Easements

A conservation easement is an interest in real property that imposes “limitations or affirmative obligations the purposes of which include retaining or protecting natural, scenic, or open-space values of real property, assuring its availability for agricultural, forest, recrea-

\textsuperscript{15} Id. § 170(b)(1)(B)(ii).
\textsuperscript{16} See infra Part I.B.
\textsuperscript{17} See infra Part II.
\textsuperscript{18} 5 U.S.C. §§ 702, 704 (2006); 26 U.S.C. § 170(f)(3)(A), (h). Estate and gift taxes are beyond the scope of this Note.
\textsuperscript{19} See infra Parts II, IV.
\textsuperscript{21} See infra Parts II, IV.
tional, or open-space use, protecting natural resources, maintaining or enhancing air or water quality.” It is a “recorded deed restriction under which [the owner] give[s] up some or all of the development rights associated with [her] property.” The land owner reserves the right to occupy and use her land; however, she and her successors in interest cannot engage in activities that are destructive or otherwise inconsistent with preserving the land’s conservation values.

The parties to the easement should view its terms as permanent and unchangeable; however, amendments are inevitable. Amendments are likely to impact property value; therefore, they also have tax consequences for the donor, including the possibility of penalties under § 6662 of the tax code. Generally, the easement holder should not permit an amendment that increases the net value of the property.

Conservation easements are usually negative servitudes held in gross. Traditionally, courts were reluctant to enforce such easements because of concerns over the accuracy of recordation systems and re-

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27 *Byers & Ponte, supra* note 25, at 188.

straints on free alienability of the land. Animating both concerns was the fear that servitudes may restrict marketability of title, preventing the sale of land that would dedicate the parcel to its most economically efficient or profitable use. Trends in federal law encouraged urban and suburban expansion. Consequently, rural areas surrounding major urban centers transitioned from rural, agricultural uses to suburban developments. As American society began to reject full development, state and local governments experimented with conservation servitudes to supplement zoning ordinances and preserve open spaces.

Realizing the need for increased conservation, all fifty states and the District of Columbia have enacted enabling statutes that “remove[] the potential common law impediments” to conservation easements. Rhode Island, wanting to protect its unique history and landscape without great expense to itself, “grant[ed] a special legal status to conservation restrictions” in order to ensure their “legal effect and enforceability.” The enabling statute for the District of Columbia provides that a conservation easement is valid even though it “is not of a character that has been recognized traditionally at common law.” Georgia’s enabling statute, which is also modeled on the Uniform Conservation Easement Act (UCEA), contains similar language incubating conservation easements from any common law infirmities.

33 Korngold, supra note 30, at 455–56.
34 See Seznec, supra note 32, at 480–81.
35 McLaughlin, supra note 28, at 1900 & n.5 (listing all of the state enabling statutes).
B. Enforcing Conservation Easements

As with any lawsuit filed in federal court, a plaintiff enforcing an easement must have standing.39 Standing is a doctrine of justiciability rooted in the Case or Controversy Clause in Article III of the United States Constitution.40 Standing requires the plaintiff to show that she has suffered a legally cognizable injury that was both caused by the defendant’s conduct and can be redressed by judicial decree.41

1. Parties to the Easement

On the model created by the UCEA, there are four parties who have standing to bring a lawsuit concerning the terms or existence of a conservation easement.42 The first two are the owner of the burdened parcel and the easement holder.43 Should the owner engage in activity that undermines the land’s conservation values, the easement holder may file suit to enjoin or otherwise restrain the owner’s inconsistent use.44 An organization holding conservation easements is required by Treasury Regulations to show a willingness to enforce its easements, and best practices counsel organizations to have enforcement plans in place.45

Easement holders may be reluctant to initiate formal legal action for fear that the resulting controversy may alienate the private landowners and the communities with whom they work.46 Anticipating a lack of will or resources, some easements include a clause conferring a right of enforcement on a third party.47 The UCEA provides that a third-party enforcement right may only be granted to a governmental body or


40 U.S. Const. art. III, § 2; Warth, 422 U.S. at 498.


43 Id. § 3(a)(1)–(2). The owner can sue to enforce a change to the terms and conditions, extinguish the easement, or, should the easement impose positive obligations on the holder, to compel their performance. Id. § 3, cmt. The other two parties are the third parties as stated in the easement and any “person authorized by other law.” Id. § 3(a)(3)–(4).

44 Hambrick, supra note 28, at 354.

45 Treas. Reg. § 1.170A-14(c) (2009); Byers & Ponte, supra note 25, at 159–60.


47 See Byers & Ponte, supra note 25, at 172 (noting that the easement instrument should clearly spell out the third party’s rights in relation to the easement holder).
charitable organization that qualifies to hold the easement in the first instance; it may not be given to individuals. Including a provision providing for third-party enforcement may require express authorization in the state enabling statute. However, the practice is common and there are cases where the court allowed third-party enforcement absent express authorization in the state’s enabling statute. Furthermore, state enabling statutes may also include provisions granting standing to neighbors, or courts may interpret them broadly to confer standing on beneficiaries or state citizens.

2. State Attorneys General

The absence of third-party enforcement provisions in the easement instrument does not foreclose third-party standing. The state attorneys general may have standing under the charitable trust or public trust doctrines. For a trust to exist, a grantor must pass legal title in property to a trustee who has a fiduciary duty to manage the trust res for the benefit of designated persons or an ascertainable class of persons. Unlike a private, benevolent trust, which requires an ascertainable class of beneficiaries, a grantor with charitable intent may settle a trust for a recognized charitable purpose without designating specific beneficiaries. Should the trustee breach his duty, the state attorney general can

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54 See Arpad, supra note 53, at 128.
55 Id. at 130; Susan N. Gary, Regulating the Management of Charities: Trust Law, Corporate Law, and Tax Law, 21 U. Haw. L. Rev. 593, 618 (1999); see Restatement (Third) Trusts § 28 & cmt. a (2003) (providing incomplete enumeration of charitable purposes, including poverty relief, promoting education, advancing religion, promoting health, supporting
enforce the charitable trust on the community’s behalf.\textsuperscript{56} Absent express statutory authorization, the attorney general may argue that enforcement of an easement’s terms is clearly in the public interest and consistent with public trust principles.\textsuperscript{57} The attorney general would have to argue that the conservation easement can be “characterized as held in trust for the public’s benefit,” and the facts and circumstances, such as the grantor’s intent, support the attorney general’s argument.\textsuperscript{58} If the attorney general could convince the court that a conservation easement is held in trust for the public, the court could enforce its terms in equity.\textsuperscript{59}

State attorneys general may also base standing to enforce conservation easements on the public trust doctrine.\textsuperscript{60} The public trust doctrine provides that the state holds in trust for its citizens their inalienable rights to access and use the air, running water, sea, and sea shores.\textsuperscript{61} Joseph Sax’s seminal article\textsuperscript{62} served as a “call to arms” for environmentalists to use the public trust doctrine as a vehicle for improved environmental protection through the courts.\textsuperscript{63} Though it has been the subject of scholarly discussion, the public trust doctrine may not be a good candidate for third-party standing to enforce conservation easements.\textsuperscript{64} The concern for free “public access underlying the public trust doctrine is [a] different” goal than “preserving natural ecological functions,” which may require denying free public access and use of natural resources.\textsuperscript{65} Furthermore, the land subject to the easement would have to be classified as land held in public trust.\textsuperscript{66}

governmental purposes, or promoting other purposes that are beneficial to the community); see also UNIF. TRUST CODE § 405(a), 7C U.L.A. 485 (2006) (providing a list that mirrors the Restatement).

\textsuperscript{56} RESTATEMENT (THIRD) TRUSTS § 28 cmt. c (2003).

\textsuperscript{57} Jay, supra note 49, at 778.

\textsuperscript{58} Id.


\textsuperscript{60} Jay, supra note 49, at 778.


\textsuperscript{63} Smith & Sweeney, supra note 61, at 308.

\textsuperscript{64} Jay, supra note 49, 779–81.


\textsuperscript{66} Jay, supra note 49, at 780–81.
state law, “conservation easements purchased through [a land protection grant] are declared to be held in public trust by the state.” The Illinois Supreme Court has also expressed a willingness to confer standing broadly on the basis of the public trust doctrine. Jessica Jay argues that these situations are rare, and when land subject to a conservation easement is held in public trust, attorney general standing would flow from the land’s status as held in public trust instead of the conservation easement’s public benefit.

3. Neighbors and Private Citizens

Two state enabling statutes provide standing for neighbors or other private citizens. Illinois has a generous provision for neighbor standing in its enabling statute, giving standing to any neighbor owning land within 500 feet of an easement-burdened parcel. In Tennessee, any citizen of the state, acting as a beneficiary, can enforce the terms of an easement transferred prior to July 1, 2005.

Furthermore, if the neighbor has a special interest in the enforcement of a conservation easement that is arguably held in trust, she may have standing to sue to enforce its terms. Depending on state law, the neighbor or public citizen may have standing under charitable trust theory if the trust provides that the individual benefits under its terms in a way that is distinct from the general public. Because of the steps of interpretation required to construe the easement as property held in public trust, standing under this theory is hard to envision.

The public trust doctrine may also confer standing on private citizens by showing that they “are constituents or taxpayers of a public trust that includes the easement-encumbered property.” Carol Necole Brown argues that “private parties should have a common law property interest in conservation easements sufficient to

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68 See Paepcke v. Pub. Bldg. Comm’n, 263 N.E.2d 11, 18 (Ill. 1970) (holding that to tell taxpayers that they have to rely solely on state action would deny their rights under the public trust doctrine for all time).
69 Jay, supra note 49, at 781.
72 Restatement (Second) of Trusts § 391 & cmt. c (1959).
73 Id. cmt. c.
75 Id. at 786.
confer standing to seek injunctive relief.” Brown’s argument draws on scholarship that seeks to reconstitute the proverbial bundle of sticks by making the metaphor more representative of the social and communal dimensions of property. Brown’s theory generates a new stick—a common law interest in all conservation easements—that is held by private citizens. By having a legally recognized interest in the easement, private citizens would have standing to enforce its terms. Brown argues that a common law property interest in conservation easements is an efficient mechanism for enforcement that respects both the conservation easement’s status as a private transaction as well as its public benefit. The common law interest in the conservation easement is also democratic in so far as it disperses decision-making about privately owned land that is protected for public benefit beyond the parties to the easement.

Another basis for citizen enforcement for conservation easements emerges from citizen-suit theory, which is common in environmental law. Sean P. Ociepka argues that citizen-suit provisions may provide a model for third-party enforcement. Congress anticipated that federal agencies might lack the resources or political will to enforce the laws. Anticipating weak enforcement, Congress included in many of the major environmental statutes citizen-suit provisions that permit citizens to bring lawsuits to enforce the provisions of the act. Citizen suits “would motivate governmental agencies to act on their nondiscretionary duties” under environmental statutes. In light of the public benefit at

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78 Brown, supra note 76, at 107–08.
79 Id. at 108–09.
80 See id. at 127.
81 See id. at 112, 132.
84 Ociepka, supra note 52, 245–48.
86 Plater et al., supra note 83, at 407 & n.38.
87 Burrows, supra note 85, at 110.
stake, citizen enforcement of conservation easements would serve a similar purpose; should the easement holder fail to enforce the easement, a public citizen could do so.88

II. CONSERVATION EASEMENTS AND THE INTERNAL REVENUE CODE:
INCOME TAX DEDUCTIONS FOR QUALIFIED CONSERVATION
CONTRIBUTIONS UNDER 26 U.S.C. § 170(h)

The Treasury “Secretary is authorized and required to make the inquiries, determinations, and assessments of all taxes . . . imposed” by the Code or any other internal revenue law.89 Each taxpayer is required to submit a return to allow the determination and assessment of the taxpayer’s liability.90 “If the Secretary determines that there is a deficiency” in the taxpayer’s reported liability with respect to income taxes, he must issue to the taxpayer a notice of deficiency before assessing the taxes.91 The taxpayer may file a petition for review with the Tax Court to challenge the deficiency finding; the failure to timely file a petition results in the assessment of the deficiency.92 If the taxpayer fails to pay her taxes after notice and demand, “the amount shall be a lien in favor of the United States upon all property and rights to property, whether real or personal, belonging to that person.”93

A. The Shape of the Incentive: Allowed Deductions and Their Value

Income tax deductions are taken against the taxpayer’s contribution base, defined as the taxpayer’s “adjusted gross income” calculated “without regard to any net operating loss carryback.”94 Gross income includes “income from whatever source derived.”95 “The applicable percentage of the contribution base varies depending on the type of donee organization and property contributed.”96 Prior to 2010, conser-

90 Id. §§ 6201(a)(1), 6203.
91 Id. § 6212(a); see Laing v. United States, 423 U.S. 161, 173 n.18 (1976) (defining deficiency as “the amount of tax imposed less any amount that may have been reported by the taxpayer on his return”).
92 26 U.S.C. § 6213(a), (c).
93 Stephen C. Loadholt Trust v. Comm’r, 80 T.C.M. (CCH) 675, 677 (2000). Section 6323 generally requires the Commissioner to file a notice of federal tax lien with the appropriate state office or the local federal district court. 26 U.S.C § 6323(f).
95 Id. § 61(a).
96 Staff of Joint Comm. on Taxation, 109th Cong., Technical Explanation of H.R. 4, The “Pension Protection Act of 2006,” as Passed by the House on July 28,
vation easements receive special treatment. Unlike other capital assets, a taxpayer may deduct the value of a contributed conservation easement up to fifty percent of her contribution base.\textsuperscript{97} She can carry over the remaining balance for annual deductions over the next fifteen years or until she exhausts the easement’s value.\textsuperscript{98} Qualified conservation contributions are not taken into account in determining the amount of other allowable charitable contributions.\textsuperscript{99} After the lapse of these special provisions, conservation easements are subject to the general provisions provided in § 170(b).\textsuperscript{100} The donor may deduct thirty percent of the value of the contribution from the taxable income in the year that it is donated and for each of the next five years or until the value of the gift is exhausted by the donations.\textsuperscript{101}

The value of a real property interest contribution is the fair market value of the property at the time of contribution.\textsuperscript{102} For qualified conservation contributions, it is the fair market value of the perpetual restriction at the time of the donation.\textsuperscript{103} To determine its value, the easement may be compared with similar transactions for similar parcels.\textsuperscript{104} If no such market exists, valuation may be determined based on the difference between the fair market value of the parcel without the easement and its fair market value after it is burdened by the easement.\textsuperscript{105} If a taxpayer uses this “before and after” method, she needs to include in the valuation the likelihood that the property would be developed absent the easement as well as the potential impact that zon-
ing, conservation, or historic preservation laws may have on the value of the burdened parcel.\textsuperscript{106}

For both the fair market value and before and after valuation methods, the Code prohibits the donor from taking a deduction where the donor anticipates financial or economic benefits that exceed the benefits for the general public.\textsuperscript{107} The Code also prohibits the donor from taking a deduction where the property value is only marginally impacted or is actually increased by the easement.\textsuperscript{108} However, a deduction will not be denied if the donor receives some incidental benefit as a result of the conservation restrictions.\textsuperscript{109}

\textbf{B. The Incentives at Work: The Intersection of Financial and Conservation Values}

The allure of the income tax incentives provided in § 170(h) to potential conservation easement donors depends on the financial status of the landowner.\textsuperscript{110} Two categories of donors are particularly common in the scholarship: the land-rich, cash-rich landowner and the land-rich, cash-poor landowner.\textsuperscript{111} Land-rich, cash-rich landowners draw large incomes that also come with steep income tax liabilities.\textsuperscript{112} They are “the most appropriate targets of the federal tax incentives” because charitable income tax deductions are most attractive to high-income earners with large tax liabilities.\textsuperscript{113}

Land-rich, cash poor landowners possess property that has valuable development potential.\textsuperscript{114} However, if they donate an easement, they

\textsuperscript{106} Treas. Reg. § 1.170A-14(h) (3)(ii). The IRS adopted this form of valuation because “there is usually no substantial record of market place sales to use as a meaningful or valid comparison.” Rev. Rul. 73-339, 1973-2 C.B. 68.

\textsuperscript{107} Treas. Reg. § 1.170A-14(h) (3)(i).

\textsuperscript{108} Id. § 1.170A-14(h) (3)(ii).

\textsuperscript{109} Id. § 1.170A-14(e)(1).

\textsuperscript{110} See McLaughlin, supra note 9, at 47–48.


\textsuperscript{112} See Jay, supra note 111, at 456. In most cases, the tax incentives are not lucrative enough to recover the transaction costs and lost value associated with the donation. See McLaughlin, supra note 9, at 49–50.

\textsuperscript{113} McLaughlin, supra note 9, at 100.

\textsuperscript{114} Jay, supra note 111, at 455–56. For this category of owner, which is often comprised of farmers or ranchers, the estate tax deductions are usually more of an incentive; by decreasing the property value, the owner can afford the state property taxes and her heirs will not need to sell the property in order to pay the estate taxes. Id.; see also Tapick, supra note 59, at 263 & n.12. But see Daniel H. Cole, Pollution & Property: Comparing
lose the development value without the opportunity to recoup it through income tax savings because their income tax liabilities are relatively small.\textsuperscript{115} The loss is particularly acute for property owners that rely on their properties’ development value as a buffer against financial uncertainty, use it as collateral, or anticipate that the proceeds from a future sale may provide retirement income.\textsuperscript{116} Congress amended the Code in 2006 to increase the incentives for low-income donors.\textsuperscript{117} Even with the added twenty-percent deduction and the fifteen-year, carry-forward term, low-income individuals will not be able to recover a significant portion of the lost development value.\textsuperscript{118} For land-rich, cash-poor owners with property near urban areas, sale and development may be the only viable option to realize their properties’ full economic value.\textsuperscript{119}

This suggests that the tax deductions—absent other motives—do not create an incentive that is attractive enough to induce land conservation.\textsuperscript{120} It is true that many donors report that their primary concern is preserving the land in a natural condition.\textsuperscript{121} However, for many land-rich, cash-poor landowners, easements nonetheless allow them to protect their livelihood.\textsuperscript{122} Valuable property has high property tax burdens that many cash-poor property owners simply cannot afford.\textsuperscript{123}

\begin{footnotesize}
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\item \textsuperscript{115} McLaughlin, supra note 9, at 29.
\item \textsuperscript{116} Id. at 27–28.
\item \textsuperscript{117} Federal Pension Protection Act of 2006, Pub. L. No. 109-280, § 1206(a)(1), 120 Stat. 780, 1068 (codified in 26 U.S.C. § 170(b)(1)(E) (2006)). Congress enhanced the tax benefits for conservation easements by increasing the deductible percentage from thirty percent to fifty percent of the contribution base and extended the period to carry the deductions forward from five years to fifteen years. Id. Ranchers and farmers who satisfy § 2032A(e)(5)’s requirements and make more than fifty percent of their gross income from farming activities may deduct one hundred percent of their contribution base. 26 U.S.C. §§ 170(b)(1)(E)(iv)–(v), 2032A(e)(5) (2006). Congress did not extend these provisions when they terminated on December 31, 2009. See id. § 170(b)(1)(E)(vi).\textsuperscript{118} supra note 13.
\item \textsuperscript{118} See McLaughlin, supra note 9, at 101.
\item \textsuperscript{119} See Hearing on the Impact of Tax Law on Land Use, Conservation, and Preservation Before the Subcomm. on Oversight of the H. Comm. on Ways and Means, 106th Cong. 61, 82 (1999) (statement of Michael Dennis, Vice President and General Counsel, The Nature Conservancy).
\item \textsuperscript{120} McLaughlin, supra note 9, at 48–49.
\item \textsuperscript{121} See Cole, supra note 114, at 62.
\item \textsuperscript{122} Stephanie L. Sandre, Conservation Easements: Minimizing Taxes and Maximizing Land, 4 Drake J. Agric. L. 357, 360 (1999).
\item Patricia E. Salkin & Amy Lavine, Land Use Law and Active Living: Opportunities for States to Assume a Leadership Role in Promoting and Incentivizing Local Options, 5 Rutgers J. L. & Pub. Pol’y 317, 357 (2008).
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Furthermore, estate taxes may be prohibitively high, forcing the owner’s heirs to sell the property to pay the tax bill. A conservation easement, by depressing the property’s value, relieves tax burdens, allowing the owner and her family to continue using the land in a way consistent with its conservation values. Some donors also find emotional satisfaction in protecting the land; they love it so much they want it to remain undeveloped.

However, the popularity of conservation as a tax planning tool suggests the tax incentives play a role in donations. The tax deductions remove some of the disincentives or hurdles to conservation. For landowners who may be predisposed to conservation, the recovery of preservation costs through income tax deductions may provide the necessary incentive for them to protect their land. Conservation also incurs maintenance costs for tasks such as expelling trespassers or adverse possessors that can be offset through income tax deductions.

The incentives lure some landowners to donate easements. Affluent landowners who do not have plans to develop their land “are likely to aggressively” take advantage of the income tax benefits. While they may be the prime target for the easements, the incentives may attract donors and donations that fall outside of the scope of Congress’s intentions. Some landowners seek to take advantage of conservation easement deductions by developing and subdividing the land, but build fewer houses than allowed under local zoning laws. Developers may also want to conserve “unusable acres” that are left over after

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124 Jay, supra note 111, at 456.
125 Id.
128 COLE, supra note 114, at 63.
129 Id.
130 Id. at 62.
131 Tapick, supra note 59, at 262; Coombes, supra note 127.
132 See McLaughlin, supra note 9, at 100.
the property has already been subdivided and developed.\textsuperscript{135} Golf course developers and owners have also sought to reap the tax advantages by burdening fairways or the open spaces separating the individual holes on a golf course.\textsuperscript{136}

\textbf{C. Using the Incentive: Current Requirements for Income Tax Deduction for Qualified Conservation Contributions}

“Generally, to be deductible as a charitable contribution under §170 [of the Code], a transfer to a charitable organization must be a gift of money or property without receipt or expectation of receipt of adequate consideration or payment commensurate with the value of the gift.”\textsuperscript{137} While 26 U.S.C. §170(f)(3)(A) requires that the donation be the owner’s full interest in the property unless it is donated in trust,\textsuperscript{138} there is an exception for conservation contributions.\textsuperscript{139} A donor can qualify for an income tax deduction if her donation is a qualified real property interest donated to a qualified organization exclusively for conservation purposes.\textsuperscript{140}

1. Qualified Real Property Interest

Under Treasury Regulation §1.170A-14(b)(2), a perpetual conservation restriction “is a restriction granted in perpetuity on the use which may be made of real property . . . that under state law has attributes similar to an easement.”\textsuperscript{141} The perpetuity requirement ensures that the easement “will prevent uses of the retained interest [that are] inconsistent with the conservation purposes of the donation.”\textsuperscript{142} State

\begin{footnotesize}
\textsuperscript{135} See, e.g., Joe Stephens & David B. Ottaway, Developers Find Payoff in Preservation—Donors Reap Tax Incentive by Giving to Land Trust, but Critics Fear Abuse of System, WASH. POST, Dec. 21, 2003, at A1 (discussing a 450-acre development in Chester County, Pennsylvania that included a residual conservation easement encumbering an undevelopable flood plain).

\textsuperscript{136} Id.


\textsuperscript{139} Id. §170(f)(3)(B)(iii).

\textsuperscript{140} Id. §170(h)(1)(A)–(C).

\textsuperscript{141} Treas. Reg. §1.170A-14(b)(2) (2009).

\textsuperscript{142} Treas. Reg. §1.170A-14(g)(1). The requirement expresses the conviction that the land needs to remain undeveloped for long periods of time if its conservation benefits are going to accrue to the public. See Mary Ann King & Sally K. Fairfax, Public Accountability and Conservation Easements: Learning from the Uniform Conservation Easement Act Debates, 46 NAT. RESOURCES J. 65, 104 (2006).
\end{footnotesize}
property law generally governs for tax purposes.\textsuperscript{143} A conservation easement granted pursuant to a state enabling statute is presumed to satisfy the qualified real property interest requirement.\textsuperscript{144}

2. Qualified Organization

The four categories of qualified organizations are federal or state government entities, tax-exempt non-profit organizations, or some subsidiary of either of them over which they exercise control.\textsuperscript{145} A qualified organization must “have a commitment to protect the conservation purposes of the donation, and have the resources to enforce the restrictions.”\textsuperscript{146} The commitment in principle does not need to be matched by the commitment of funds set aside to enforce any of the organization’s easements.\textsuperscript{147}

By restricting the parties that can receive conservation easements, the tax code ensures some measure of public accountability via “self-governing restraints.”\textsuperscript{148} Government agencies are accountable to the public through the democratic process.\textsuperscript{149} The checking power of democracy creates an incentive for government agencies “to accept only those easements that provide public benefit.”\textsuperscript{150} Recognizing that this check is imperfect, Congress included a requirement that the preservation be pursuant to a clearly delineated governmental conservation policy.\textsuperscript{151} Congress also limited the qualifying organizations to charities on the theory that charities are accountable to the public for their support in the form of donations or volunteer services.\textsuperscript{152} Compared to private foundations that are not dependent on private donations, chari-

\textsuperscript{144} Treas. Reg. § 1.170A-14(b)(2). State marketable title acts do not disqualify conservation easements that are subject to re-recording requirements. See id. § 1.170A-14(g)(3); Welsh, supra note 143, at 229 (describing re-recording requirements).
\textsuperscript{145} 26 U.S.C. § 170(b) (1) (A) (vi).
\textsuperscript{146} Treas. Reg. § 1.170A-14(c).
\textsuperscript{147} Id.
\textsuperscript{148} Hambrick, supra note 28, at 354; King & Fairfax, supra note 142, at 92.
\textsuperscript{149} McLaughlin, supra note 10, at 60–61.
\textsuperscript{150} Id. at 61.
\textsuperscript{152} McLaughlin, supra note 9, at 61–62. In theory, a charity’s interest in maintaining a positive reputation and good relationship with its community operates as an indirect check on its activities. See King & Fairfax, supra note 142, at 92.
ties are more likely to both enforce the terms of their easements and to provide benefits to the general public.\footnote{McLaughlin, supra note 9 at 61–62. Congress assumes that charities have to be responsive to their communities and the general public if they are to survive. Id.}

3. Conservation Purpose

The term “conservation purpose” means: (1) “[t]he preservation of land areas for outdoor recreation” and education; (2) the protection of natural wildlife habitat, fish, plants, or ecosystems; (3) the preservation of open space, including farmland and forests; or (4) “the preservation of a historically important land area or certified historic structure.”\footnote{Treas. Reg. § 1.170A-14(d)(1)(i)–(iv) (2008).} A contribution needs to satisfy only one of the four conservation purposes to qualify for a deduction.\footnote{S. Rep. No. 96-1007, at 10 (1980), reprinted in 1980 U.S.C.C.A.N. 6736, 6745–46.}

a. Recreation or Education

Donations of a qualified real property interest that preserve land areas for outdoor recreation and education of the general public meet Treasury regulations’ requirements.\footnote{Treas. Reg. § 1.170A-14(d)(2)(i).} To qualify, the recreational or educational use by the general public must be substantial and regular.\footnote{Id. § 1.170A-14(d)(2)(ii).} Because most easement donors do not want to grant access to their land for recreational activities, donors usually justify their donations under one or more of the other three categories.\footnote{Richard Brewer, Conservancy: The Land Trust Movement in America 155 (2003); John B. Wright, Conservation Easements: An Analysis of Donated Development Rights, 59 J. Am. Plan. Ass’n 487, 489 (1993).}

b. Significant Habitat or Ecosystem

The donation of a qualified real property interest qualifies for a deduction when it protects a “significant relatively natural habitat” for fish, wildlife, plant community, or similar ecosystem.\footnote{Treas. Reg. § 1.170A-14(d)(3)(i). Significant habitats or ecosystems include, but are not limited to habitats for rare or endangered species, “natural areas that represent high quality examples of a terrestrial community or aquatic community,” or natural areas bordering national, local, or state parks that contribute to the parks’ ecological viability. Id. § 1.170A-14(d)(3)(ii). In addition to parks, this provision includes “nature preserve, wildlife refuge, wilderness area, and other similar conservation area.” Id.} The Tax Court adopted a plain meaning definition of habitat as “[t]he area or environment where an organism or ecological community normally lives or
occurs’ or ‘[t]he place where a person or thing is most likely to be found.’” The U.S. Court of Appeals for the Sixth Circuit followed the Tax Court in adopting the dictionary definition of habitat. The courts have also held that the size of the parcel is not a critical factor. What matters is the assurance that the rights and uses retained by the property owner do not undermine the conservation purpose. Furthermore, the Code does not require public access where the conservation easement protects environmental systems or natural habitat. While human interaction and alteration of the environment that allow “fish, wildlife, or plants [to] continue to exist . . . in a relatively natural state” do not foreclose taking the deduction, ecosystem fragility and the conservation of wildlife habitat may require the complete ban on public access.

c. Preservation of Open Space

Open space easements, allowed under § 170(h)(4)(A) are both the most common and the most problematic type of conservation easement. The preservation of open space, which includes farmland and forest land, qualifies for tax deductions when the preservation is for the scenic enjoyment of the general public or pursuant to a clearly delineated federal, state, or local governmental conservation policy. It also must yield a significant public benefit.

i. Scenic Enjoyment

A contribution to preserve open space for the scenic enjoyment of the public qualifies where “development of the property would impair the scenic character of the local rural or urban landscape or would interfere with a scenic panorama” enjoyed from a neighboring park or wilderness area. The determination of whether a contribution of a conservation easement qualifies under the scenic enjoyment conserva-

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161 Glass v. Comm’r, 471 F.3d 698, 708 (6th Cir. 2006).
162 Glass, 471 F.3d at 711.
163 See id.
165 Id. § 1.170A-14(d)(3)(i), (iii).
168 Id.
tion purpose is based on a subjective test that considers “all pertinent facts and circumstances germane to the contribution.” The test weighs factors such as variations in “topography, geology, biology, and cultural and economic conditions.” The taxpayer has to demonstrate the scenic characteristics of the donation, and show that there is a significant public benefit independent of the subjective, scenic quality of the land.

To assist the taxpayer in demonstrating the scenic quality of the donation, Treasury Regulation § 1.170A-14 provides a list of eight factors. The requirements are largely contextual, examining the relationship and compatibility of the burdened parcel and neighboring parcels, the proximity of urban areas, and the degree to which the land use “maintains the scale and character of the urban landscape to preserve open space, visual enjoyment, and sunlight for the surrounding area.” Openness is a particularly important factor for urban or densely populated areas where the open space can provide relief from urban closeness. Other factors are aesthetic, weighing the degree of contrast and variety provided by the visual scene.

ii. Governmental Conservation Policy

Conservation easement donations are deductible as preserving open space where they further a clearly delineated governmental policy embodied in a “specific, identified conservation project.” In these instances, the donation extends the protection to types of property public officials have already deemed worthy of preservation or conservation. The acceptance of the easement by the governmental body tends to establish the requirement of a clearly delineated governmental policy. However, the regulations suggest that a rigorous review process—such as site-specific resolutions by boards of supervisors or plan-

170 Id.
171 Id.
174 Id. § 1.170A-14(d)(4)(ii)(1), (4), (6).
175 Id. § 1.170A-14(d)(4)(ii)(3)–(4).
176 Id. § 1.170A-14(d)(4)(ii)(7)–(8).
177 Id. § 1.170A-14(d)(4)(ii)(2), (5). The remaining factors examine whether the donated easement is consistent with government landscape inventories. Id. § 1.170A-14(d)(4)(ii)(7)–(8).
178 Id. § 1.170A-14(d)(4)(iii).
ning commissioners—is necessary where the donation is accepted by a
land trust or similar organization on behalf of the government.179

iii. Significant Public Benefit

All contributions made to preserve “open space must yield a sig-
nificant public benefit.”180 The determination of public benefit is con-
textual; factors germane for one contribution may be irrelevant for an-
other contribution.181 The IRS provides guidance by listing factors it
deems relevant in evaluating the significance of the public benefit con-
ferred by the contribution.182 The list of factors includes the “unique-
ness of the property,” the intensity of land development and population
density in the vicinity, the contribution’s consistency with government
and private conservation activities in the area, and the degree to which
development would degrade the area’s scenic quality.183

d. Exclusively for Conservation Purposes

Section 170(h) (5) (A) reiterates the perpetuity requirement.184 A
deduction will not be denied simply because some incidental benefit
accrues to the donor as a result of her donation.185 The requirement
that the donation be exclusively for conservation purposes does not
prohibit all activities on the land; uses that will not interfere with the
conservation purposes advanced by the easement are allowed.186 A use
that contravenes one conservation purpose is permitted, provided the
use furthers a different conservation purpose.187

179 Treas. Reg. § 1.170A-14(d) (4) (iii) (B).
180 Id. § 1.170A-14(d) (4) (iv).
181 Id.
182 Id. § 1.170A-14(d) (4) (iv)(A) (1)–(11).
183 Id.
185 Treas. Reg. § 1.170A-14(e) (1).
186 See id. § 1.170A-14(e) (2). Common examples are selective timber harvesting and
non-industrial farming. See id.
187 Treas. Reg. § 1.170A-14(e) (3). For instance, an archeological investigation, using
sound archeological practices, does not prevent a deduction even though it may interrupt
or impair a scenic view. See id.
III. 26 U.S.C. § 170(h) as Environmental Law

A. The Transmission of Environmental Values into the Tax Code

The Code is generally concerned with the federal government’s assessment and collection of tax revenue. It is widely accepted that Congress may use its taxing power to further national objectives that are not related to the assessment and collection of revenue. The tax system may be utilized for nonrevenue ends when the goal is of overriding importance to society and the tax code offers the most effective means for achieving the objective.

Congress uses the Code as a vehicle for environmental protection. The tax incentives for conservation easements are simply one among many tax incentives geared towards environmental protection. For instance, farmers who conserve water without damaging wetlands are entitled to deduct the associated costs from their income taxes. Brownfield redevelopment is also encouraged through tax incentives that seek to recruit private-sector partners to assist with clean-up costs and economic revitalization. Congress also uses tax incentives to encourage energy efficiency and reductions in greenhouse gas emissions.

188 See Deborah A. Dyson, Note, Bankruptcy Court Jurisdiction and the Power to Enjoin the IRS, 70 Minn. L. Rev. 1279, 1305 (1986).
190 Id. at 516.
194 See, e.g., id. § 1396 (granting to employers in “Empowerment Zones” a 20% tax credit for the first $15,000 of qualified wages paid to each employee who is a zone resident and performs most employment services within the zone); see also Scott A. Tschirgi, Aiming the Tax Code at Distressed Areas: An Examination and Analysis of Current Enterprise Zone Proposals, 43 Fla. L. Rev. 991, 1006–12 (1991). Brownfields, usually located in inner-city areas, are abandoned industrial sites that pose environmental risks because they contain hazardous contamination. Andrea Wortzel, Greening the Inner Cities: Can Federal Tax Incentives Solve the Brownfields Problem?, 29 Urb. Law. 309, 310 n.6 (1997).
195 See generally Richard A. Westin, Energy and Environmental Tax Changes in the Flood of Recent Federal Revenue Laws and What They Imply, 15 Penn St. Envtl. L. Rev. 171 (2007) (providing a detailed discussion of recent legislative action that uses the tax code to promote environmental initiatives).
The IRS recognizes the intersection of environmental law and the Code in two respects that are particularly pertinent for this Note. First, the IRS has expressly connected tax deductions for land conservation with the national policy of preserving unique aspects of the natural environment.\footnote{Rev. Rul. 76-204, 1976-1 C.B. 152.} An organization that protected ecologically sensitive land was entitled to tax-exempt status because it enhanced the accomplishments of the express national policy announced in the National Environmental Policy Act and federal conservation laws.\footnote{Id.} Organizations that improved water quality and provided sanctuary to wild birds and animals also qualified for tax-exempt status.\footnote{Rev. Rul. 67-292, 1967-2 C.B. 184; Rev. Rul. 70-186, 1970-1 C.B. 129.}

In addition, the IRS has also held that private litigation that enforces environmental statutes promotes a charitable purpose.\footnote{Rev. Rul. 80-278, 1980-2 C.B. 175.} In making this determination, the IRS based its conclusion on the congressional policy that private litigation is a desirable and appropriate means for enforcing environmental statutes.\footnote{Id. (citing citizen-suit provisions in environmental statutes).} Private action implementing public policy is frequently desirable\footnote{Alyeska Pipeline Serv. v. Wilderness Soc’y, 421 U.S. 240, 271 (1975).} because it can vindicate “expressions of congressional or constitutional policy.”\footnote{Id. at 285 (Marshall, J., dissenting).}

**B. The Administrative Procedure Act in the Context of the Internal Revenue Code and Environmental Law**

1. Environmental Accountability: Standing and Judicial Review of Agency Action Under the Administrative Procedures Act

Federal environmental laws are enforced in one of three ways: by federal agencies designated by Congress to do so, the citizen-suit provisions commonly found in environmental protection statutes, and citizens or private organizations that use the Administrative Procedure Act (APA) to bring suit and force agencies to abide by their legal obligations and rules.\footnote{Susan D. Daggett, NGOs as Lawmakers, Watchdogs, Whistle-Blowers, and Private Attorneys General, COLO. J. INT’L ENVTL. L. & POL’Y, Winter 2002, at 99, 101.} The second and third forms are particularly common as citizens and non-profit environmental organizations have assumed quasi-executive roles in enforcing environmental laws and
By routinely including citizen-suit provisions in environmental statutes, Congress envisions increased public participation in the environmental arena. Congress also grants more breadth for citizen suits in the environmental context than in other areas of the law. Finally, the APA provides that the aggrieved party can bring her action in a court specified by statute or in a court of competent jurisdiction. The APA is frequently used for bringing suits to enforce environmental laws and regulations.

The APA allows any person suffering legal wrong or adversely affected or aggrieved by agency action to seek judicial review of the agency action. Agency means “each authority of the Government of the United States, whether or not it is within or subject to review by another agency.” Agency action “includes the whole or a part of an agency rule, order, license, sanction, relief, or the equivalent or denial thereof, or failure to act.” Congress adopted the term agency action to “assure the complete coverage of every form of agency power, proceeding, action, or inaction.” Consequently, the term encompasses the findings, conclusions, or reasons for the action or inaction.

The APA presumes the availability of judicial review; however, a plaintiff bringing suit under the APA must satisfy the constitutional and

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204 See id.
205 See Ociepka, supra note 52, at 246.
206 Bennett v. Spear, 520 U.S. 154, 164–65 (1997) (noting that in the context of commercial matters, Congress authorizes suits only by parties injured in their business or property interests).
209 5 U.S.C. § 702. Person “includes an individual, partnership, corporation, association, or public or private organization other than an agency.” Id. § 551(2).
210 Id. § 551(1). Section 551(1) exempts certain parties, including Congress, the courts, the governments of the U.S. territories and the District of Columbia, court martial proceedings or military commissions, and military authority exercised in a theater of war or occupied territory. Id. § 551(1)(A)–(G). In addition, the President is not an agency for the purposes of the APA. Franklin v. Massachusetts, 505 U.S. 788, 800–01 (1992).
213 See id.
prudential threshold for standing. The court has articulated three elements for standing. First, the plaintiff must show that she suffered injury in fact that is “concrete and particularized.” The injury does not have to be significant; harm to “recreational or even the mere esthetic interests . . . will suffice.” The second requirement for standing is the existence of a causal connection between the injury and the conduct complained of undertaken by the defendant. In the regulatory and administrative context, the contribution to the harm does not need to be significant; a small incremental step is subject to judicial review. The final requirement is that judicial decision in favor of the plaintiff will redress the injury. The plaintiff must personally profit from a favorable outcome in the case, otherwise the court would overstep its assigned role in our constitutional system. Redressability may include the extent to which an adverse judgment in court deters the plaintiff from continuing the unlawful conduct.

A plaintiff that satisfies Article III standing still has to demonstrate that it is prudent for the court to resolve her dispute. For cases brought pursuant to the APA, the Court has articulated a zone of interest test to determine if the party satisfies prudential concerns. To satisfy the test, “the plaintiff must establish that the injury [s]he complains of . . . falls within the ‘zone of interests’ sought to be protected by the statutory provision whose violation forms the legal basis for” her complaint.

217 Id. at 560.
219 Lujan, 504 U.S. at 560. The conduct complained of cannot be that of some third party who is not a party to the case. Id. Rather, it must be “fairly traceable” to the defendant’s allegedly unlawful conduct. Id.
221 Lujan, 504 U.S. at 561.
223 Friends of the Earth, Inc., 528 U.S. at 185–86.
to challenge agency disregard of the law.”  When challenging agency action, the particular provision upon which the plaintiff relies in making her claim determines whether she falls within the zone of interest. The plaintiff’s complaint does not have to fall within the overall purpose of the statute, but merely the specific interest or interests Congress sought to protect through the specific statutory provision the plaintiff relies on in bringing suit.

When judicial review is sought solely on the grounds provided by § 702, the agency action must be final agency action for which there is no other adequate judicial remedy. The finality requirement is “concerned with whether the initial decisionmaker has arrived at a definitive position on the issue that inflicts” the injury for which the plaintiff is seeking a remedy. To be final agency action, the action must be the consummation of the agency’s decision-making process. The Court has held that mere recommendations are not final agency action.

2. Treasury Department and Internal Revenue Service Compliance with the APA

Many scholars have described the IRS’s continued non-compliance with the rule-making requirements provided in section 553 of the APA. Less attention has been given to the question of whether agency action taken by the Treasury Department or IRS is subject to judicial review as provided by the APA, sections 701 through 706.

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229 See Clarke, 479 U.S. at 401.
232 Bennett, 520 U.S. at 177–78.
233 See id. at 178.
Stephen M. Goodman argues that the Treasury and the IRS are both subject to judicial review.\textsuperscript{235} “Since a revenue ruling is designed to interpret the Internal Revenue Code, it qualifies as an ‘agency action.’”\textsuperscript{236} If the IRS’s action is found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law, the reviewing court is authorized to rule against the agency. Moreover, the Treasury Department and the IRS do not possess qualities or responsibilities that shield them from judicial review.\textsuperscript{237} Courts regularly hear cases reviewing tax determinations by the IRS. While it is true that the Anti-Injunction Act shields the IRS from suits enjoining the collection of revenue, it does not prohibit judicial review when a positive outcome for the plaintiff results in the collection of additional revenue.\textsuperscript{238}

3. The Anti-Injunction Act

Two significant obstacles remain to securing judicial review: § 7421 of the Code, sometimes called the Anti-Injunction Act, and the Declaratory Judgment Act (DJA).\textsuperscript{239} Section 7421 provides that “no suit for the purpose of restraining the assessment or collection of any tax shall be maintained in any court by any person, whether or not such person is the person against whom such tax was assessed.”\textsuperscript{240} The DJA excludes from the federal courts’ remedies any declaratory judgments in cases or controversies “with respect to Federal taxes” that are not brought pursuant to § 7428 of the Tax Code.\textsuperscript{241}

The Court reads § 7421 broadly “to preclude pre-enforcement review of tax cases” that include individual taxpayer claims “with only indirect bearing upon the flow of tax revenues . . . regardless of the merits of the issues raised.”\textsuperscript{242} In a unanimous opinion, the\textit{Enoch v. Williams Packing & Navigation Co.}\ Court stated that the congressional purpose

\textsuperscript{236} Id.
\textsuperscript{238} See infra Part III.B.3.
\textsuperscript{239} A Problem of Remedy, supra note 234, at 1164–65.
\textsuperscript{240} 26 U.S.C. § 7421(a) (2006).
\textsuperscript{241} 28 U.S.C. § 2201(a) (2006). Section 7428(a) provides for declaratory relief in cases involving the classification or status of an organization under § 501(c)(3). 26 U.S.C. § 7428(a). While it has never addressed the question directly, the Court implies that the scope of § 7421 and the DJA are co-extensive, suggesting in Alexander v. “Americans United” Inc., that the federal tax exemption to the DJA “is at least as broad as the prohibition of the Anti-Injunction Act.” 416 U.S. 752, 759 n.10 (1974). Therefore, I will limit my discussion to the Anti-Injunction Act.
\textsuperscript{242} A Problem of Remedy, supra note 234, at 1167–68.
for § 7421 was to “permit the United States to assess and collect taxes alleged to be due without judicial intervention, and to require” taxpayer-initiated suits for refund to determine disputes regarding IRS tax assessments.243

Congress passed the Anti-Injunction Act in a context where equitable principles disfavored injunctions against tax collection, absent clear proof that available remedies were inadequate.244 Against this background, it is likely that Congress, speaking in broad terms, intended the language “to compel litigants to make use solely of the avenues of review opened by Congress.”245 Though courts recognize that the path for redress is suboptimal, courts have emphasized that Congress provided an avenue for judicial review through litigation that seeks a refund after the payment of the assessed taxes.246

The Court has placed two important limits on § 7421’s scope. Section 7421 does not prevent suits by parties for whom Congress has not provided an avenue for judicial review.247 “Congress did not intend the Act to apply to actions brought by aggrieved parties for whom it has not provided an alternative remedy.”248 The Court has also limited § 7421’s scope to actions that frustrate the collection of revenues.249 The Anti-Injunction Act does not apply to cases where the plaintiff is seeking an injunction that would require the IRS to assess and collect taxes from a third party.250 The Abortion Rights Mobilization Court acknowledged that third party suits may be a strain on IRS resources, but found that the theme in the cases is that § 7421 “only extends to those actions it expressly refers to” that would restrain the collection of tax revenues.251

IV. INCREASED PUBLIC ACCOUNTABILITY FOR THE ENFORCEMENT OF CONSERVATION EASEMENTS VIA THE TAX CODE

This Note proposes a collateral method of enforcement that does not seek to enforce the terms of a conservation easement, but focuses on whether they entitle the easement donor to the income tax deduc-
tions provided by § 170 of the Code. An aggrieved party would file the envisioned cause of action against the IRS Commissioner for improperly allowing the deduction for an easement that fails to satisfy § 170(h)’s requirements. The suit would allege that the Commissioner improperly authorized the deduction for the easement instead of finding a deficiency in the taxpayer’s return. The relief sought by the lawsuit would be an order requiring the Commissioner to initiate deficiency proceedings against the easement donor.

A. Chosing a Course (or Cause) of Action: Assessing Alternative Arguments for Third Party Standing to Enforce Conservation Easements

While direct suits may be preferable in some situations, the reach of a suit against the Commissioner is distinct from the traditional modes of enforcement. Enforcement proceedings that seek to compel the owner to comply with the easement terms assume that the easements are beneficial; however, not all conservation easements actually provide a public benefit. If the goal is conserving land, suing to enforce the terms of an easement that provides little to no public benefit would not protect conservation values. The envisioned lawsuit presumes that the terms of the easement, by failing to satisfy § 170(h)’s requirements, do not provide to the general public the benefit that justifies the foregone tax revenue.

The proposed cause of action presumes that the plaintiff will be engaged in the community. Like the organization discussed in Revenue Ruling 76-204, the plaintiff will need to have a cooperative relationship with the other local conservationists and government officials.

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252 See supra Parts I.B, II.  
253 See supra Part II.  
256 See supra Part I.B.  
257 See Brown, supra note 76, at 87 & n.3, 91 (expressing presumption that conservation easements promote the public good).  
258 See Miller Testimony, supra note 133, at 38–39.  
259 The participation of the land trust community in the treasury regulations comment proceedings suggests that the Code’s requirements ensure some degree of environmental protection and benefit. See McLaughlin, supra note 9, at 15.  
261 Rev. Rul. 76-204, 1976-1 C.B. 152. (discussing an organization’s collaboration with local officials).
to keep abreast of what is happening in the community. A plaintiff may encounter difficulty in securing specific information even though the terms of the easement are supposed to be recorded in the *situs* state’s recordation system. State recording practices vary from state to state and are notoriously unreliable. The plaintiff will likely have to use discovery to ascertain the value of the easement and the deduction taken on the taxpayer’s tax return.

**B. Getting into Court: Pleadings and Establishing Standing**

1. The Commissioner’s Unlawful Conduct

Seeking judicial review pursuant to APA §§ 702 and 704, the complaint would allege that the Commissioner failed to execute his duties under §§ 6201, 6212, and 6213 of the Code. Under § 6201 of the Internal Revenue Code, the Commissioner is required to “make the inquiries, determinations, and assessments of all taxes . . . imposed by” the Code. In the case of a donation of a conservation easement that does not satisfy § 170(h)’s requirements, the Commissioner has the duty to initiate deficiency proceedings against the taxpayer. In *Bennett v. Spear*, the Commissioner’s failure to do so allowed the taxpayer to take actions inconsistent with the donation’s supposed conservation purposes that undermined the plaintiff’s interest in the preservation of the burdened parcel. The suit would seek an order compelling the Commissioner to file a notice of deficiency that initiates deficiency proceedings against the taxpayer.
2. Standing

While standing ensures the constitutional and prudential exercise of the court’s judicial function instead of the merits of the plaintiff’s claim,\(^\text{272}\) it can nevertheless serve as a proxy for the determination of the merits.\(^\text{273}\) This is particularly true for cases brought under the APA.\(^\text{274}\) If the court wants to get to the merits of the case, it will find that the plaintiff has standing; if it does not, it will find that the plaintiff lacks standing.\(^\text{275}\) While establishing standing will be difficult for a plaintiff challenging the Commissioner’s approval of income tax deductions for a conservation easement, it is not impossible.\(^\text{276}\)

a. Injury in Fact

Even though the Supreme Court has narrowed standing in environmental actions,\(^\text{277}\) it is still available for environmental suits where the plaintiffs are personally harmed by a defendant’s conduct.\(^\text{278}\) The complaint must show a legally cognizable harm suffered by the plaintiff or the plaintiff’s members if the plaintiff is an organization.\(^\text{279}\) While the general public benefit associated with conservation easements is likely too broad a foundation to support standing absent concrete injury,\(^\text{280}\) a plaintiff that has a recreational or an aesthetic interest in the burdened parcel can show a concrete, personal injury sufficient to confer standing.\(^\text{281}\) For instance, if the plaintiff drives along a highway with a scenic


\(^{276}\) See infra Part IV.B.2.a–c.


\(^{279}\) *Earth Island Inst.*, 129 S. Ct. at 1149.

\(^{280}\) Valley Forge Christian Coll. v. Americans United for Separation of Church & State, 454 U.S. 464, 475 (1982) (noting that a generalized grievance is insufficient and that the court will not adjudicate abstract questions of wide public significance); Sierra Club v. Morton, 405 U.S. 727, 735, 739 (1972) (denying standing because the injury was not specific to the Sierra Club members and therefore too diffuse). But see *Sierra Club*, 405 U.S. at 737 (noting that once plaintiff demonstrates standing, he may “argue the public interest in support of his claim that the agency has failed to comply with its statutory mandate.”).

\(^{281}\) *Earth Island Inst.*, 129 S. Ct. at 1149; *Laidlaw*, 528 U.S. at 181–83.
b. Causation

Causation in the standing inquiry is analogous to proximate causation in tort law. The plaintiff must show a “fairly traceable causal connection between the claimed injury and the challenged conduct.” The tax incentives and subsequent failure of the IRS to properly police the deductions must contribute to the plaintiff’s injury. The court is inconsistent in its holdings on how direct the connection must be in order to confer standing on the plaintiffs. United State v. SCRAP is viewed by many as the zenith in environmental standing where the causal chain between the defendant’s actions and the plaintiffs’ injuries was particularly attenuated. However, after Warth and Eastern Kentucky “[o]nly an optimist will assume . . . that injuries as indirect in nature as those recognized by the court in SCRAP” will be sufficient to confer standing on the plaintiff.

Admittedly, the plaintiff in the envisioned suit should anticipate difficulty in satisfying the causation requirement. Causation is particularly difficult to establish when the injury involves the actions of a third party that are not before the court. However, it may not be impossible, provided the plaintiff’s pleadings develop a factual scenario that shows a bona fide question of fact that the Commissioner’s failure

\[282\] Laidlaw, 528 U.S. at 181–83.

\[283\] Id. at 183–84 (supporting standing where affidavits shows concrete injury to aesthetic and recreational interests).

\[284\] Sommer, supra note 39, at 290; see Kevin A. Coyle, Comment, Standing of Third Parties to Challenge Administrative Agency Actions, 76 Cal. L. Rev. 1061, 1089–90 (1988).


\[287\] Grant, supra note 273, at 1411.

\[288\] Id. at 1410–11; see United States v. Students Challenging Regulatory Agency Proce-

\[289\] Nichol, supra note 286, at 197.

\[290\] See id. (arguing that Simon v. E. Ky. Welfare Rights Org., 426 U.S. 26 (1976) was the “death knell” for cases alleging indirect injury through tax determinations).

\[291\] Grant, supra note 270, at 1411.
to initiate deficiency proceedings lead to the plaintiff’s injury. Additionally the plaintiff should allege that weak enforcement leads to the donation of easements with terms that do not adequately promote the conservation values underlying the tax deductions.

The plaintiff does not have to demonstrate that she will win on the merits in order to establish standing. It is a threshold determination, and she simply has to make an initial showing that she suffered injury as a consequence of the Commissioner’s failure to enforce § 170(h)’s requirements. Returning to the example of the highway viewshed, the plaintiff would have to show that the development along the highway happened because the Commissioner failed to make a deficiency determination, and that the development would not have happened if the Commissioner had initiated deficiency proceedings against the taxpayer who donated the easement.

c. Redressability

The relief sought would be an order compelling the Commissioner to serve on the taxpayer a notice of deficiency and subsequent tax assessment. Like causation, redressability may prove difficult for the envisioned suit. The plaintiff will have to show that the deficiency proceeding will actually restore or otherwise provide relief for the injury suffered due to the inadequacy of the challenged conservation easement. The envisioned remedy would do little to provide relief where the easement burdens a parcel with little or no conservation value even though such easements exist.

However, the court order could lead to amended easement terms. Absent an easement holder that will easily relinquish the easement, the owner of the burdened parcel usually cannot make the uni-

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292 See Nichol, supra note 286, at 197 (discussing Simon, 426 U.S. at 45 & n.25).
295 See Warth, 422 U.S. at 517–18; supra notes 215–23 and accompanying text.
296 If the taxpayer challenges the deficiency by filing a petition with the Tax Court, the Commissioner must await the outcome of the Tax Court’s decision before assessing the taxes. 26 U.S.C. § 6213(a).
297 See E. Ky. Welfare Rights Org., 426 U.S. at 42–43 (arguing that redressability required the hospital to be dependent on favorable tax treatment).
299 See Miller Testimony, supra note 133, at 38–39.
300 See Byers & Ponte, supra note 25, at 186–87 (discussing the process for amending easement terms).
lateral decision to undo the restriction on her land.301 After the initiation of deficiency proceedings, the taxpayer may petition the Tax Court to allow amendments to the easement terms in order to bring them into compliance with the Code, thereby recouping a portion of the property’s lost development value.302 The court order can also lead to the cessation of development activities on the burdened parcel.303 If development is underway the easement may be modified to relocate or scale-back the development to reduce its impact.304

The suit may also deter other taxpayers from taking deductions for conservation contributions that fail to satisfy § 170(h)’s requirements.305 The court has held that deterrence from ongoing or future unlawful conduct that injures the plaintiff is an adequate remedy.306 Studies have shown that taxpayers who suspect or anticipate that the IRS will detect any violations—or that their violations will be reported to the IRS by third parties—are more likely to comply with the Code; suits seeking deficiency proceedings may have the same effect in ensuring tax compliance.307 The envisioned suit can act to bring to the IRS’s attention conservation easements that fail to satisfy 170(h)’s requirements, increasing the probability of detection of those easements that fail to satisfy § 170(h)’s requirements as well as increased compliance with the same.308

d. The Anti-Injunction Act

Plaintiffs bringing suit to challenge the deductions can anticipate the argument that the relief sought is prohibited by the Anti-Injunction Act.309 As demonstrated above, such an argument misconstrues the

301 See id. at 190–97 (discussing easement termination and release).
302 See 26 U.S.C. §§ 170(b), 6212, 6213 (2006); Strasburg v. Comm’r, 79 T.C.M. (CCH) 1697, 1704–05 (2000). Amending the easement terms may lead to tax penalties for the donor and donee, depending on the change in the value of the easement. See Byers & Ponte, supra note 25, at 188–89.
303 See Byers & Ponte, supra note 25, at 158–59.
304 See id.
307 See Leviner, supra note 305, at 400–01.
308 See id.
309 26 U.S.C. § 7421 (2006); see supra notes 239–51 and accompanying text.
Act’s scope and applicability.\textsuperscript{310} First of all, there is no other judicial remedy available to the plaintiffs to challenge the donor’s tax liabilities.\textsuperscript{311} The petition to the Tax Court for a refund, which is the route provided by Congress, is unavailable for challenging the Commissioner’s failure to serve a deficiency notice.\textsuperscript{312} Furthermore, the envisioned suit does involve pre-collection judicial interference that would impinge or otherwise frustrate the orderly collection of revenue, § 7421’s primary concern.\textsuperscript{313} Rather, it increases the flow of revenue into the Treasury and therefore falls outside the scope of § 7421.\textsuperscript{314}

C. Prudential Concerns

Because the suit is brought pursuant to the APA, the plaintiff will have to show that the action challenged was final agency action.\textsuperscript{315} There is little doubt that the assessment officer’s recordation of the taxpayer’s liabilities constitutes final agency action because the IRS has reached a “definitive position” regarding the particular taxpayer’s return.\textsuperscript{316} Furthermore, the plaintiff does not have the option of pursuing other procedural or judicial remedies; therefore, the assessment officer’s processing of the taxpayer’s return is action that is subject to judicial review under the APA.\textsuperscript{317}

She will also have to show that she is within the zone of interest protected by the statute.\textsuperscript{318} The zone of interest test will frequently involve a citizen-suit provision;\textsuperscript{319} however, it has emerged as a “prudential standing requirement[\textsuperscript{320}] of general application.” The zone of interest test is a “guide for deciding whether” Congress intended that “a particular plaintiff should be heard to complain of a particular agency decision.”\textsuperscript{321} To satisfy the test, which is not particularly difficult, the plaintiff will have to show that her interests are more than “marginally

\begin{itemize}
  \item\textsuperscript{310} Abortion Rights Mobilization, Inc. v. Regan, 544 F. Supp. 471, 489–90 (S.D.N.Y. 1982); \textit{see supra} Part III.B.3.
  \item\textsuperscript{311} \textit{See} Zelenak, \textit{supra} note 249, at 614–15.
  \item\textsuperscript{312} 26 U.S.C. § 6213(a); \textit{Abortion Rights Mobilization}, 544 F. Supp. at 489–90.
  \item\textsuperscript{313} Bob Jones Univ. v. Simon, 416 U.S. 725, 736 (1974).
  \item\textsuperscript{314} Zelenak, \textit{supra} note 249, at 613.
  \item\textsuperscript{317} \textit{See} 26 U.S.C. §§ 6203, 6213; \textit{Darby}, 509 U.S. at 144, 146.
  \item\textsuperscript{318} Ass’n of Data Processing Serv. Orgs. v. Camp, 397 U.S. 150, 153 (1970).
  \item\textsuperscript{319} \textit{See}, e.g., Bennett v. Spear, 520 U.S. 154, 164 (1997) (discussing that the Endangered Species Act’s citizen-suit provision broadened the zone of interest).
  \item\textsuperscript{320} \textit{Id.} at 163.
  \item\textsuperscript{321} Clarke v. Sec. Indus. Ass’n, 479 U.S. 388, 399 (1987).
\end{itemize}
related” to and consistent with § 170(h)’s purpose.\textsuperscript{322} Because the zone of interest test is not identical with injury-in-fact, the plaintiff could appeal to the significant public benefit provided by conservation easements.\textsuperscript{323} Drawing on the language in Bennett v. Spear, the plaintiff could argue that she falls within the zone of interest protected by conservation easements because she is a member of the general public, to whom the easements’ benefits run.\textsuperscript{324} She does not have to appeal to the legislative purpose behind the various tax reform measures, but can rely specifically on the purpose behind the legislation authorizing deductions for conservation contributions.\textsuperscript{325} The legislative history,\textsuperscript{326} the conservation purposes test under the Code,\textsuperscript{327} and the regulations\textsuperscript{328} indicate that the tax incentives provide a measure of environmental protection against development and the loss of open spaces.\textsuperscript{329} Congress intended tax incentives to attract and facilitate the donation of easements with significant benefits that accrue to the general public.\textsuperscript{330} Just as citizen-suit provisions anticipate a lack of political will and resources to enforce environmental laws,\textsuperscript{331} a suit against the Commissioner can provide additional policing of conservation easements to ensure that the deductions are justified by the benefit to the public and the environment.\textsuperscript{332}

Conclusion

Conservation easements have grown in popularity as a consequence of the generous tax deductions available to easement donors. Since the 1980s, the number of land trust and similar organizations has grown in response to an increased awareness of the value of open space, particularly on the urban fringe. Conservation easements have been an effective tool, preserving millions of acres; however, they have

\textsuperscript{322} See id.
\textsuperscript{323} See Bennett, 520 U.S. at 165 (describing the environment as “a matter in which it is common to think all persons have an interest”).
\textsuperscript{325} Clarke, 479 U.S. at 401.
\textsuperscript{327} 26 U.S.C. § 170(h)(4).
\textsuperscript{328} See Treas. Reg. § 1.170A-14(d) (2009).
\textsuperscript{331} See Burrows, supra note 85, at 109–10.
\textsuperscript{332} I.R.S. Notice 2004-41, 2004-1 C.B. 31 (discussing increased enforcement activity by the IRS); see Jay, supra note 49, at 786–87; Ociepka, supra note 52, at 247–48.
also been a tool for tax shelters and other tax abuses. The IRS does not have the resources to audit every taxpayer who takes a deduction for a conservation easement. A suit that challenges the deduction may provide a collateral method for enforcing conservation easements, ensuring that the easements for which deductions are taken actually yield a substantial public benefit.
KILLING US SOFTLY: HOW SUB-THERAPEUTIC DOSING OF LIVESTOCK CAUSES DRUG-RESISTANT BACTERIA IN HUMANS

ARIELE LESSING*

Abstract: This Note explores antibiotic-resistant bacterial strains in humans and their roots in American industrial livestock practices. Factory farms promote the growth of antibiotic-resistant bacteria—or “superbugs”—by giving animals subtherapeutic doses of antibiotics to prevent the diseases that result from confinement and unhygienic conditions. Although Congress has repeatedly attempted to pass legislation to curtail the use of subtherapeutic antibiotic dosing in livestock, those efforts have yielded little change for nearly a decade. Similarly, the Food and Drug Administration (FDA) has stood by while antibiotic-resistance in human bacteria has exploded into a critical public health issue. This Note advocates for citizen action under the Administrative Procedure Act to prompt the FDA to withdraw animal approval for antibiotics that are important to human health. A citizen petition has a greater chance of success today than in past years due to the newly available scientific data and international recognition of the dangers of the overuse of antibiotics in factory farming.

Introduction

For the latter part of the twentieth century, American farm policies and meat processing industries have sacrificed human health for the economic efficiency of industrialized livestock production. Doctors, scientists, and journalists have watched and protested as drug-resistant strains of bacteria, known sensationally as “superbugs,” have become increasingly prominent in hospitals and areas surrounding livestock operations. These superbugs—such as dangerous antibiotic-resistant...
staphylococcus (staph) infections and vancomycin-resistant bacteria—are emerging, claiming the health and lives of Americans every year.

In what Nicholas D. Kristof terms an “unconscionable” manner, Congress and the Food and Drug Administration (FDA) promote the growth of superbugs by permitting agribusiness to use sub-therapeutic levels of antibiotics in order to safely keep large numbers of food animals in confined, unsanitary conditions.

The precipitous rise in antibiotic-resistant strains of bacteria in the last few decades is due to the large amounts of sub-therapeutic doses of antibiotics being fed to livestock on industrial animal farms. The move from small, family-owned farms to large, industrial factory farms has resulted in farmers tightly packing their animals together in order to increase their profits. However, the competition among farmers to produce as much animal food product as possible necessitates the use of sub-therapeutic doses of antibiotics to keep livestock healthy and productive. In recent decades, studies have shown that the practice of administering sub-therapeutic doses of antibiotics to animals contributes to strains of antibiotic-resistant bacteria in humans. These antibiotic-resistant strains of bacteria cause humans to become more virulently ill for longer periods of time than their antibiotic-susceptible

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3 ST398—a virulent strain of methicillin-resistant Staphylococcus aureus (MRSA). Id.
4 Vancomycin is an antibiotic used to treat staphylococcal infections that are resistant to other forms of antibiotics and to treat humans with penicillin allergies. Baxter Healthcare Corp., Fact Sheet on Vancomycin Hydrochloride Injection, Solution 5 (2009), available at http://www.accessdata.fda.gov/drugsatfda_docs/label/2009/050671s014lbl.pdf.
7 Kristof, supra note 5; see U.S. GEN. ACCOUNTING OFFICE [GAO], FOOD SAFETY: THE AGRICULTURAL USE OF ANTIBIOTICS AND ITS IMPLICATIONS FOR HUMAN HEALTH 4 (1999).
9 See id.
10 See Michael Barza et al., Introduction to THE NEED TO IMPROVE ANTIMICROBIAL USE IN AGRICULTURE: ECOLOGICAL AND HUMAN HEALTH CONSEQUENCES, at S74 (Michael Barza & Sherwood L. Gorbach eds., 2002).
counterparts.\textsuperscript{11} When humans contract these more potent diseases, they are ill for a longer period of time; consequently, they suffer the physical and emotional burden of prolonged illness and death. They also put a larger financial burden on the public health system.\textsuperscript{12}

Neither the legislature nor the FDA has been able to properly deal with the problem of sub-therapeutic livestock dosing and its creation of superbugs.\textsuperscript{13} This Note proposes citizen action through an FDA citizen petition as a viable solution to congressional and administrative inaction on the dangers that excessive antibiotic use in animals poses to public health.\textsuperscript{14} Such a petition, filed under the authority of the Administrative Procedure Act (APA), would ideally prompt the FDA to withdraw approval for certain antibiotics crucial to human health.\textsuperscript{15} Were the FDA to deny the petition, this Note further illustrates how a citizens’ group would successfully navigate an action for judicial review to compel the FDA to act.\textsuperscript{16}

Part I of this Note explores the history of factory farming in America and how the practice of sub-therapeutic dosing of food animals mitigates the inherent problems with industrial farming.\textsuperscript{17} Part II conveys how antibiotic resistance occurs and how antibiotic resistance moves from food animals to humans.\textsuperscript{18} Part III discusses proposed legislation and FDA action to curtail antibiotic use in livestock.\textsuperscript{19} Part IV addresses the process of FDA petitions and judicial review of agency inaction.\textsuperscript{20}

\textsuperscript{11} See id.
\textsuperscript{14} See 21 C.F.R. § 10.30 (2009).
\textsuperscript{16} See infra Part V.
\textsuperscript{17} See infra Part I.
\textsuperscript{18} See infra Part II.
\textsuperscript{19} See infra Part III.
\textsuperscript{20} See infra Part IV.
Finally, Part V analyzes how a citizens group might successfully challenge FDA inaction regarding animal antibiotic use under the APA.  

I. THE GROWTH OF INDUSTRIAL ANIMAL HUSBANDRY

A. From Family Farm to Factory Farm

Before World War II, farming practices in the United States focused on small, family-owned farms, which produced multiple animal products from diverse livestock in amounts sufficient to subsist. This practice allowed the animals and the land to work together so that farms continued producing food indefinitely without damage to the health of their ecosystems. The symbiotic relationship between animal and land was effective because animals were fed by neighboring crops on the same farm while certain plots lay fallow. Animal wastes were recycled back onto the fallow plots whose nutrients had been depleted by crops in previous seasons. In addition to the improved land conditions from family farming, the animals themselves were given enough room to grow, exercise, and socially interact with other animals according to their behavioral needs.

The traditional style of farming began to change in the 1940s when farming practices shifted their focus to streamlined, assembly-line production of animal food products. Farmers developed technology that allowed animals to live in specialized indoor environments in which animals’ dietary, physical, and social needs were largely ignored. Animals’ natural needs became a liability to the farmer because they did not conform to the technological standards of the machines that, henceforth, would process the animals into food. In addition to the new assembly-line style automation, farming in the United States became highly concentrated, resulting in fewer farms and greater amounts of

21 See infra Part V.
23 See id. at 43–44.
24 See id.
25 See id.
26 See id. at 43.
27 See id. at 44.
28 See Cheever, supra note 22, at 45; Jonny Frank, Note, Factory Farming: An Imminent Clash Between Animal Rights Activists and Agribusiness, 7 B.C. ENVT'L AFF. L. REV. 423, 427–30 (1979) (describing the changes that chickens and hogs undergo in order to modify the animals’ natural needs to the practices of the factory farm).
29 See Frank, supra note 28, at 424.
livestock.30 Today, factory farms are run more like industries than the mini-ecosystems of traditional family farms.31 At any given time, factory farms—which are known as animal feeding operations (AFOs)—raise hundreds, thousands, or even millions of animals in confinement.32

Two main problems emerging from the density of AFOs are the enormous amounts of waste produced by the animals and the propensity of the animals to become diseased.33 Certain AFOs that contain an extremely large number of animals are known as concentrated animal feeding operations (CAFOs).34 For larger animals, such as cows, CAFOs contain at least 1000 animals while for smaller animals, such as chickens, CAFOs may house tens of thousands of animals.35 In addition to the density of animals within each individual CAFO, groups of CAFOs tend to be concentrated in certain parts of the country, exacerbating the environmental hazards that arise from these livestock factories.36 Because of the concentration of animals in each CAFO and the geographic concentration of the CAFOs themselves, farmers require even more technology to manage the problems that began to arise from the confinement of so many animals.37

B. The Legacy of Factory Farming: Waste and Disease

Animal waste imposes a negative environmental impact on the surrounding air and water.38 The total amount of waste produced by American factory farms is estimated to average 500 million tons of manure each year, or roughly three times the total human waste produced in the United States. These high levels of animal waste require special holding

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30 See GURIAN-SHERMAN, supra note 1, at 2; Cheever, supra note 22, at 44.
31 Frank, supra note 28, at 424.
33 See Cheever, supra note 22, at 44-45.
34 Ctr. for Disease Control & Prevention, Animal Feeding Operations—Agricultural Water—Other Uses of Water—Healthy Water, http://www.cdc.gov/healthywater/other/agricultural/afo.html (last visited May 14, 2010). CAFOs are feed lots that house a large number of animals in a confined area for forty-five days or more over twelve consecutive months. Id.
35 GURIAN-SHERMAN, supra note 1, at 2.
36 See id.
37 Cheever, supra note 22, at 44.
systems, such as the manure lagoons commonly found on swine farms. These manure lagoons contain the air pollutant ammonia, as well as water-soluble pollutants and pathogens that seep into nearby water supplies and are consequently regulated under the Clean Water Act.

The cramped quarters in which animals are kept and the stress of their unnatural lives on factory farms place them in greater danger of becoming diseased and behaving in aggressive and unnatural ways that promote injury and illness. Consequently, factory-farm animals are redesigned to minimize the dangers of infection and injury to the flock or herd. For example, battery chickens, hens raised for egg production, are confined in only forty-eight square inches of standing room per chicken and undergo a process called “forced molting.” Forced molting is a way to unnaturally increase a battery chicken’s egg production in the later stages of its life. First, the flock is denied food for two weeks. This starvation causes premature molting, which in turn, causes the hen to enter a second season of production instead of the natural waning of the egg cycle. Broiler chickens, raised for their meat, are de-beaked in order to prevent them from attacking one another as a

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39 See 40 C.F.R. § 122.23 (2009); see also Mallon, supra note 12, at 396 (citing a Sierra Club estimate that American CAFOs produce 2.7 trillion tons of waste per year).

40 See 33 U.S.C. § 1311 (2006); Revised National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines for Concentrated Animal Feeding Operations in Response to the Waterkeeper Decision, 73 Fed. Reg. 70,418, 70,419 (Nov. 20, 2008) (to be codified at 40 C.F.R. pts. 9, 122, 412); GAO, ANIMAL AGRICULTURE: INFORMATION ON WASTE MANAGEMENT AND WATER QUALITY ISSUES 11 (1995); Terence J. Centner, Establishing a Rational Basis for Regulating Animal Feeding Operations: A View of the Evidence, 27 VT. L. REV. 115, 118 (2002); Wilson, supra note 32, at 441. Water-soluble pollutants include an estimated 1.3 million tons of nitrogen and 700,000 tons of phosphorous from AFOs and CAFOs that pollute the nation’s rivers and streams each year. Centner, supra, at 118. These nutrients can over-stimulate algae growth in the tributaries, upsetting the natural ecological balance of a natural water source. See GAO, supra, at 11. While the extreme environmental impacts of modern factory farming are manifold, they require a separate analysis beyond the scope of this Note. See, e.g., Animal Feeding Operations Consent Agreement and Final Order, 70 Fed. Reg. 4958, 4958 (Jan. 31, 2005) (offering AFOs the chance to participate in a study of possible AFO liability under environmental statutes concerned with air quality, hazardous wastes, and toxic clean-up); National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitation Guidelines and Standards for Concentrated Animal Feeding Operations (CAFOs), 68 Fed. Reg. at 7176; Centner, supra, at 117–19; Wilson, supra note 32, at 439–42.

41 Mallon, supra note 12, at 396–97.

42 Cheever, supra note 22, at 45.

43 Id. Although the USDA discourages this practice, they do not prohibit it and some farmers still use it. See id. at 46.

44 Id. at 45.

45 Id.

46 See id.
reaction to their crowded confinement, poor ventilation, deficient diet, the presence of crippled birds in the pen. Veal calves endure an iron-

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deficient diet—consisting of antibiotics, vitamins, and powdered milk—

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that gives their meat the pale color that makes it marketable. Hogs also exhibit aggressive behavior in reaction to overcrowding, frequently biting each other’s tails; farmers deal with this problem by docking the tails of their pigs. As a result of overcrowding, pigs also suffer from “porcine stress syndrome,” a condition analogous to human shock, which can cause suffering so severe that pigs have been known to die from the stress.

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The stress of modifications such as tail docking and de-beaking is compounded by the overcrowded conditions on CAFOs, making the animals perfect incubators for the growth and rapid spread of bacterial infections. Antibiotics are introduced into animal feed to combat disease and infection in order to maximize health and growth.

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C. Sub-Therapeutic Doses of Antibiotics Mitigate the Stress of Factory Farm Life

Factory farm operations use antibiotics in feed animals for three main purposes: therapy for illness, to prevent disease, and to increase growth. Farmers administer antibiotics in sub-therapeutic doses when pursuing the latter two categories, disease prevention and growth. Sub-therapeutic doses are low levels of antibiotics that are insufficient to kill an invading bacterial infection, but are effective in preventing bacterial infection from occurring. About 70% of all antibiotics in the United States are administered to animals in sub-therapeutic doses.

47 O’Brien, supra note 8, at 415.

48 See id. at 420–21. Veal calves are particularly susceptible to disease because they are kept in stalls so small that they have no room to defecate. Id. at 421. Instead, they sit in their own excrement and breathe the ammonia it produces, causing respiratory disorders that require yet more antibiotics to treat. See id.


50 Id. at 418–19.

51 See Mallon, supra note 12, at 395–96.

52 Id. at 399.

53 Goforth & Goforth, supra note 5, at 45.

54 Id. at 45–46.

55 See Terence J. Centner, Regulating the Use of Non-Therapeutic Antibiotics in Food Animals, 21 GEO. INT’L ENVT'L. L. REV. 1, 8–10 (2008).

56 See Press Release, Keep Antibiotics Working, EPA’s New CAFO Rule Fails to Uphold Agency’s Mission “To Protect Human Health,” Says National Advocacy Group (Dec. 16,
resulting in the administration of 15 to 18 million pounds of antibiotics in sub-therapeutic doses annually.\textsuperscript{57}

Sub-therapeutic antibiotics for disease prevention are typically used during high risk periods for the animal, such as after weaning.\textsuperscript{58} Animals in confinement are particularly susceptible to diseases such as pneumonia and diarrhea, the major causes of calf mortality, or \textit{necrotic enteritis}, an intestinal infection in poultry.\textsuperscript{59} Today, antibiotics are administered preemptively to all confined animals in drug-laced feed instead of being prescribed by veterinarians to prevent these diseases.\textsuperscript{60} Though antibiotics are most often used during high risk periods to prevent diseases, the ability to mass medicate through feed enables farmers to continue administering antibiotics for growth enhancement over the course of the animals’ lives, contributing to the development of drug-resistant pathogens.\textsuperscript{61}

It appears that sub-therapeutic doses of antibiotics cause growth in livestock; however, the link between drug use and increased animal size is not well understood.\textsuperscript{62} While scientists do not fully understand how antibiotics improve growth, there are several possible explanations for the apparent relationship between weight gain and antibiotic use.\textsuperscript{63} One possibility is that the antibiotics mitigate the deleterious effects of diseases that drain animals’ nutrient reserves, but would not otherwise be severe enough to warrant medical treatment.\textsuperscript{64} Another possibility is that the antibiotics strengthen the animals’ immune systems, better enabling them to fight off the low-grade diseases resulting from overcrowding and trauma.\textsuperscript{65} Lastly, antibiotics in animal feed might alter the animals’ metabolic rate, resulting in weight gain.\textsuperscript{66} All three of these possibilities indirectly emphasize the notion that if animal hygiene was

\textsuperscript{57} Scott A. McEwan & Paula J. Fedorka-Cray, \textit{Antimicrobial Use and Resistance in Animals}, \textit{in The Need to Improve Antimicrobial Use in Agriculture: Ecology and Human Health Consequences}, \textit{supra} note 10, at S93, S97.

\textsuperscript{58} Id. at S93.

\textsuperscript{59} See id. at S95.

\textsuperscript{60} See Mallon, \textit{supra} note 12, at 399.

\textsuperscript{61} See Gurian-Sherman, \textit{supra} note 1, at 5.


\textsuperscript{63} McEwan & Fedorka-Cray, \textit{supra} note 57, at S98. Reports of weight gain of 1\% to 11\% of an animal’s weight indicate that antibiotics are a valuable growth promoter for the livestock industry. See \textit{id}. 

\textsuperscript{64} See \textit{id}.

\textsuperscript{65} See \textit{id}.

\textsuperscript{66} See \textit{id}.
II. The Relationship Between Sub-Therapeutic Antibiotic Dosing and Human Health

A. How Antibiotic Resistance Occurs

The conditions on factory farms and concentrated animal feeding operations (CAFOs) render them a dangerous source of antibiotic resistance. Sub-therapeutic doses of antibiotics administered over long periods of time to a large group of animals promote natural selection for drug-resistant bacterial strains. This natural selection occurs when an antibiotic used to treat an infection kills off the bacteria most susceptible to that antibiotic, leaving behind the most resistant bacteria to multiply and spread.

Antibiotics and the problem of antibiotic resistance are best understood in light of three broad principles. First, antibiotics are used to kill bacteria, but are not used to treat illnesses arising from other sources, such as viruses. Second, “antibiotic-resistant bacteria” are bacteria that can cause infection and are immune to the drug typically used to treat that infection. Third, antibiotic resistance in bacteria is a trait that can be spread from bacterium to bacterium without exposure to the antibiotic.

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67 See id.
68 GAO, ANTIBIOTIC RESISTANCE: FEDERAL AGENCIES NEED TO BETTER FOCUS EFFORTS TO ADDRESS RISK TO HUMANS FROM ANTIBIOTIC USE IN ANIMALS 9 (2004).
69 See id.
70 See StuB. Levy, The Antibiotic Paradox: How Miracle Drugs Are Destroying the Miracle 4–8 (1992). The term “antibiotic” traditionally refers to compounds made by microorganisms, whereas the term “antimicrobials” refers to synthetically derived compounds that perform the same function as antibiotics. Paul Ebner, CAFOs and Public Health: The Fate of Unabsorbed Antibiotics, Purdue Extension, Feb. 2007, at 1, 1, http://www.ces.purdue.edu/extmedia/ID/ID-348-W.pdf. Factory farms use both antibiotics and antimicrobials, and this Note will refer to them collectively as “antibiotics.”
72 See Levy, supra note 70, at 7.
Antibiotic resistance can occur in two different ways: it can happen spontaneously as the result of genetic mutation in bacteria’s genetic makeup or the resistance can be transmitted from bacterium to bacterium by genetic vectors such as plasmids, which are extra-chromosomal DNA molecules.74 A strain of bacteria that is not resistant to an antibiotic—a “susceptible strain”—differs from a strain that is resistant to an antibiotic—a “resistant strain”—because the latter exhibits a resistance gene.75 In Darwinian fashion, resistance genes tend to link with genes for virulence, resulting in a co-transfer of two genes that increases a disease’s level of contagiousness and harmfulness while simultaneously rendering the disease immune to certain antibiotics.76

B. Animals to Humans: The Resistance Link

The Center for Disease Control and the American Medical Association have known about the link between antibiotic use in livestock and antibiotic resistance in humans at least since 1984 and 2001, respectively.77 According to the 2002 study by the Alliance for the Prudent Use of Antibiotics (APUA) and other medical scholars who have written on the subject, direct, temporal, and circumstantial evidence all definitively show that antibiotic use in livestock causes drug resistant infections in humans.78

Primarily, scientists have discovered evidence directly tracing human infections back to specific livestock operations.79 One of the first indicators of this direct link between animal and human resistance was the 1976 study by Stuart Levy.80 This study showed the rise and fall of

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74 O’Brien, supra note 73, at S79.
75 Id. A resistance gene can travel on the plasmid independently of the rest of the bacteria’s chromosomes, allowing the resistance gene to travel from one bacterial strain to another, creating an entire group of different bacteria which are all resistant to the same antibiotic. Id. at S79–80.
76 Michael Barza, Potential Mechanisms of Increased Disease in Humans from Antimicrobial Resistance in Food Animals, in The Need to Improve Antimicrobial Use in Agriculture, supra note 10, at S123, S124.
77 Mallon, supra note 12, at 400. The American Medical Association spoke out against sub-therapeutic antibiotic use in 2001 because of its belief that antibiotics in animals posed a threat to human health because of the increase in the number of drug-resistant pathogens. Id.
79 See LEVY, supra note 70, at 145–47.
80 LEVY, supra note 70.
tetracycline-resistant bacteria in members of a Massachusetts farm family whose animals were fed with tetracycline-resistant feed. Tetracycline-resistant E. coli bacteria began to appear in chickens within twenty-four to thirty-six hours after they were fed tetracycline-laced feed. Five to six months after the initial drug-laced feeding, tetracycline-resistant E. coli began appearing in the human family members working on the farm, even though the family members had not eaten any of the chickens and were not directly exposed to the tetracycline. A similar study showed the direct link between antibiotic resistant bacteria in farm animals and humans in a 1985 outbreak of salmonella in California. In that case, scientists traced a particular strain of multi-drug resistant salmonella back to a fast food restaurant, then to the meat processing plant, and ultimately back to the dairy farm that used an unapproved antibiotic in its feed.

A second type of evidence seeks to show the link between resistance in animals and humans by illustrating that human resistance usually follows animal resistance in a particular location. Perhaps the most notable example of animal drug resistance causing human drug resistance is the American experience with fluoroquinone-resistant campylobacter. Two years after the FDA approved fluoroquinolone for animal use, the percentage of fluoroquinolone-resistant bacteria in chickens rose to 14%. During the same time period, the amount of fluoroquinolone-resistant bacteria in humans rose from 1.3% to 10.2%. Similarly, in the Netherlands, fluoroquinolone-resistance rose in poultry from 0% to

81 Id. Tetracycline is a family of antibiotics that is commonly used because of its low toxicity and broad spectrum of activity. Id. at 146. Additionally, its properties as a growth enhancer for livestock were discovered in 1947 when a farmer administered chlorotetracycline, the first member of the tetracycline family, to his chickens and noted an increased in their growth rate. Id. at 138–39.

82 Id. at 145. Illustrating the ease with which resistance genes transfer between bacterial strains, the chickens showed E. coli resistance to other antibiotics that they had never been exposed to within three months of being started on tetracycline feed. Id.

83 See id. at 145–47. Additionally, the humans on the farm exhibited the same multi-drug resistance as the chickens. Id. at 146–47.


85 Id.

86 See KAW Fact Sheet, supra note 78, at 1–2.

87 See Swartz, supra note 84, at S114. Campylobacter is a food-borne illness found in cattle, hogs, and poultry whose symptoms typically include intestinal distress. See id. at S111.

88 Id. at S114.

89 Id.
14% within the same seven-year period and human infection rose from 0% to 11%. The close temporal link between animal resistance and human resistance illustrates that the former causes the latter.

There is also significant circumstantial evidence linking antibiotic resistance in humans to sub-therapeutic antibiotic dosing of food animals. Reports by the Union of Concerned Scientists show that 70% of all antibiotics produced in the United States are administered in sub-therapeutic doses to livestock. This 70% includes the 13.5 million pounds of antibiotics important to human medicine that American livestock producers administer. Antibiotics that are widely used in human medicine, such as tetracycline and penicillin, are also extensively used in livestock. The administration of antibiotics has contributed to the rise in drug resistant bacteria, notably among campylobacter, salmonella, and E. coli.

There are three main ways in which antibiotic use—and therefore antibiotic resistance—in animals is transferred to humans: via food, via human contact with livestock, and via the environment. As demonstrated by the study of a Massachusetts farm family’s contraction of tetracycline-resistant E. coli, humans in close contact with food animals are likely to pick up resistant bacteria. In that study, two weeks after the tetracycline-laced feed was introduced to the livestock for the first time, farm hands and family members began to secrete tetracycline-resistant bacteria. Livestock workers can become infected with drug-resistant bacteria through handling animals themselves, animal feed, or animal manure. Once the drug-resistant bacterial strain infects a farm worker, it can be readily transferred to family, friends, and other members of the community.

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90 Id.
91 See id.
92 KAW Fact Sheet, supra note 78, at 1–2.
94 Mellon & Fondriest, supra note 93.
95 See id. Campylobacter, salmonella, and E. coli are all human food-borne illnesses, known colloquially as “food poisoning,” that generally cause intestinal distress. See Swartz, supra note 84, at S111.
97 LEVY, supra note 70, at 145–47.
98 KAW Fact Sheet, supra note 78.
100 Id.
Another mode of animal to human transference is through the food products themselves. Over the course of an animal’s life on a factory farm, drug resistant bacteria build-up in its intestines; during slaughter and processing, those bacteria are released and spread to the processed and packaged meat. When someone consumes that processed and packaged meat, she also consumes drug-resistant bacterial strains, which then colonize in her intestines. The resistance gene will then thrive in the intestines where it can eventually cause harm by creating new resistant strains across different bacterial species. Reporting on this danger in 2002, Consumer Reports found that 42% of supermarket broiler chickens were contaminated with campylobacter. Of that 42% of infected broiler chickens, 20% were infected with an antibiotic-resistant strain of the disease that can transfer to the human consumer.

A third method of human transference is through the environment, most notably through contaminated water. As mentioned above, the Union of Concerned Scientists estimated that 70% of all antibiotics used in the United States are administered in sub-therapeutic doses to livestock that are not ill. In most instances, these antibiotics will pass through the animals’ intestines, which results in as much as 75% of the antibiotics consumed being excreted in the animals’ manure. American CAFOs generate 2.7 trillion pounds of manure annually; manure that is stored in open manure lagoons and later spread as fertilizer on agricultural fields. This manure contains antibiotics and antibiotic-resistant bacteria from the animals’ intestines, and it frequently leaks from the lagoons into nearby groundwater. Furthermore, the animal excrement from lagoons themselves and the waste

101 Id.
102 Id.
103 KAW Fact Sheet, supra note 78, at 2.
104 Id.
106 Consumers Union Press Release, supra note 105.
107 Ohio Envl. Council, supra note 96.
108 KAW Press Release, supra note 56.
109 Id.
110 Mallon, supra note 12, at 396; see Wilson, supra note 32, at 441.
111 See Ohio Envl. Council, supra note 96.
applied to fields mix with rainwater and irrigation that falls on the fields, becoming runoff that enters lakes and streams, many of which serve as water sources for human consumption.\textsuperscript{112}

According to Dr. Michael Barza, editor of the APUA Scientific Advisory Panel, drug-resistant bacteria are a major threat to human health because the bacterial strains make humans sicker than non-resistant strains.\textsuperscript{113} Humans are rendered sicker by at least three methods: (1) patients taking an antibiotic are already weakened and their internal bacteria are disturbed, leaving them vulnerable to resistant bacterial strains;\textsuperscript{114} (2) patients suffer from the increased virulence of drug-resistant bacterial strains due to the genetic linking of resistance genes with virulence genes;\textsuperscript{115} and (3) patients become incubators of resistant bacteria when their own intestinal bacteria acquire new resistance genes.\textsuperscript{116}

Logically, the animal antibiotics most dangerous to human health are those that are important to human therapy.\textsuperscript{117} For example, fluoroquinolones—an important human antibiotic used in treating campylobacter and salmonella infections—have been compromised as a human drug due to the resistance fostered by its use in poultry farming.\textsuperscript{118} The resistant strain of bacteria caused more hospitalizations, longer illnesses, and more expensive treatment for infected patients than a non-resistant strain of the same bacteria.\textsuperscript{119}

III. Agency Driven Action and Antibiotic Bans

A. The Benefits of Antibiotic Bans

Legislative bans on the use of sub-therapeutic doses of antibiotics in agriculture may mitigate drug resistant bacterial infections in humans because bans reduce the levels of antibiotic-resistant bacteria in

\textsuperscript{112} See Todd, supra note 38, at 481.

\textsuperscript{113} See Barza, supra note 76, at S123–24 & tbl.1.

\textsuperscript{114} Id. at S124 & tbl.1. This first category of patients is particularly susceptible to disease resistant strains because those strains are the ones most likely to have survived the initial antibiotic cycle. See id.

\textsuperscript{115} Id.

\textsuperscript{116} See id.

\textsuperscript{117} See Preservation of Antibiotics for Medical Treatment Act of 2009, H.R. 1549, 111th Cong. (2009) (stating its purpose to preserve the effectiveness of antibiotics important to human therapy by targeting the agricultural use of those antibiotics).

\textsuperscript{118} GAO, supra note 68, at 6–7, 20.

\textsuperscript{119} See id. at 24.
the environment. The European example is particularly telling. Legislation regulating antibiotic use in animals has been enacted since 1986, followed by bans in individual countries over the next several years. In 1998, the European Union Council Regulation 2821/98 withdrew approval for four animal feed additives. This baseline was augmented by individual countries that have passed more stringent standards since the initial ban. After these regulations were put into effect, studies in Europe showed a “significant decline” in the levels of resistant bacteria.

Although it is too soon for conclusive results, the object of the agency-driven fluoroquinolone ban in the United States was to lower the occurrence of fluoroquinolone-resistant bacteria in humans. In 2005, the Food and Drug Administration (FDA) banned the use of Baytril, a fluoroquinolone antibiotic, in poultry production. The FDA decided to withdraw approval for use of the drug because it was contributing to the increase of antibiotic-resistant bacterial infections in humans. Baytril is chemically similar to Cipro, a drug used in humans to fight off food-borne illnesses such as campylobacter and salmonella. Use of Baytril in animals caused more strains of fluoroquinolone-resistant food poisoning in humans than existed before Baytril’s approval for animal use, resulting in an estimated 8700 days of hospitalization per year. Because the continued use of Baytril in poultry production caused humans to contract Cipro-resistant infections, the FDA banned the drug in order to reverse the escalating number of Cipro-resistant strains of bacteria.

The arguments against legislative bans on sub-therapeutic antibiotic doses usually focus on one issue: the cost to the agricultural indus-

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120 See, e.g., Briceño, supra note 13, at 526–27; Centner, supra note 55, at 8.
121 See Briceño, supra note 13, at 528; Centner, supra note 55, at 8.
122 Briceño, supra note 13, at 528. Sweden, Switzerland, and Denmark were among the first countries to ban the use of certain antibiotics in animal husbandry practices. See id.
123 See Centner, supra note 55, at 16.
124 Id. The German Federal Veterinarians Association demonstrates this principle with their more stringent guidelines for antibiotic use. Id.
125 Id. at 6.
126 See id. at 7.
128 GAO, supra note 68, at 6.
129 See Baytril Press Release, supra note 127.
130 See GAO, supra note 68, at 24.
131 See Briceño, supra note 13, at 522; Baytril Press Release, supra note 127.
try of less robust animals.\textsuperscript{132} The additional costs associated with banning sub-therapeutic antibiotic use consist of the money spent on additional feed to make up for lost growth enhancement, and the increase in animal illness and mortality that can negatively affect yield.\textsuperscript{133} However, the validity of this argument is called into question by the European example, which shows that for certain producers, the additional cost of feed can be offset by the decrease in the cost of antibiotics.\textsuperscript{134}

There is disagreement between industry and research institutions on what effect a sub-therapeutic antibiotic ban would have in the United States.\textsuperscript{135} For example, one American study conducted by the agricultural industry projected that hog farmers would lose $0.79 per hog—a noticeable loss of profit—if antibiotics were no longer approved for use in feed.\textsuperscript{136} This study also predicted that the cost of a ban would increase during stressful times for the animal, such as weaning, and in farms with “questionable hygiene practices.”\textsuperscript{137} Another industry study, which focused on broiler chickens, predicted a 1.76% rise in production costs per year if antibiotic use in feed was banned; however, a 2007 citizens’ group study refutes that estimate.\textsuperscript{138} Instead, the citizens’ study finds that banning growth enhancing antibiotics actually increases the value of the flock.\textsuperscript{139} A possible explanation for the positive industry results in Europe from reduced antibiotic use is different animal husbandry techniques and farm organization.\textsuperscript{140} Interestingly, in the American studies that found a similar benefit to the industry from reduced antibiotic dosing and improved hygienic practices, such as frequent litter changes, were directly related to lower mortality rates.\textsuperscript{141}

\textsuperscript{132} See Briceño, \textit{supra} note 13, at 527; Centner, \textit{supra} note 55, at 17–18.
\textsuperscript{133} See Centner, \textit{supra} note 55, at 18.
\textsuperscript{134} Henrik C. Wegener, \textit{Ending the Use of Antimicrobial Growth Promoters Is Making a Difference}, 69 ASM News 443, 448 (2003). A Danish study where antibiotic use was cut by 50% revealed that animal mortality rates did not increase. In fact they appeared to decline slightly, and the cost to the producer of raising the animals did not increase. \textit{Id.} at 446–48. Moreover, the study shows that when accompanied by changes in management practices that create a more hygienic environment for the animals, bans on antibiotic use are positive for the animals, the environment, and the farmers. \textit{See id.} at 448.
\textsuperscript{136} McBride et al., \textit{supra} note 135, at 4.
\textsuperscript{137} \textit{Id.} at 3–4.
\textsuperscript{138} Graham et al., \textit{supra} note 135, at 80 (discussing a National Research Council study using “unsubstantiated” industry estimates).
\textsuperscript{139} \textit{Id.} at 85.
\textsuperscript{140} \textit{Id.} at 86.
\textsuperscript{141} \textit{See id.}
B. A Study of Agency Driven Action: The Fluoroquinolone Example

In the case of Baytril, the FDA underwent a long and complicated process to ban its use in food animals. The FDA first proposed the Baytril ban in 2000, but the agricultural industry delayed the FDA’s action for five years while the Bayer Company appealed the decision through various levels of administrative review. Ultimately, the administrative law judge found that Bayer had not sufficiently demonstrated that Baytril was safe for use in poultry production. Additionally, the judge found that enrofloxacin use in poultry is a source of fluoroquinolone-resistant bacterial infections of campylobacter in humans that adversely affect human health. In 2005, the FDA successfully withdrew approval for Baytril; fluoroquinolones are no longer used in U.S. poultry production.

C. The Need for Citizen Driven Action

Though the FDA’s banning of Baytril through the Center for Veterinary Medicine (CVM)—the administrative branch that makes decisions regarding animal antibiotics—is encouraging, citizens’ groups cannot rely on the CVM to consistently ban from animal use the remaining seven antibiotics that are crucial to human health. The fluoroquinolone action, while ultimately successful, is the only withdrawal of any animal antibiotic that the FDA has ever undertaken. In fact, the only action that the FDA has taken since the decision to ban fluoroquinolone in poultry use is the issuance of Guidance #152, a set of

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142 See Briceño, supra note 13, at 529.
144 Id. at 6.
145 Id. at 5.
146 See 21 C.F.R. §§ 520.813(d)(1)(iii), 556.228(b) (2005); FDA Baytril Ban, supra note 143, at 121.
148 See Briceño, supra note 13, at 532–33 (noting that although favorable in its outcome, the FDA ruling on enrofloxacin took five years and is only the third agricultural drug withdrawal proceeding completed in FDA history) The seven essential antibiotics are: penicillin, tetracycline, macrolide, lincosamide, streptogramin, aminoglycoside, and sulfonamide. See infra note 154.
149 See id. at 521.
guidelines for evaluating the safety of new animal antibiotics. Guidance #152 recommends that pharmaceutical companies self-evaluate their drugs’ risk levels on the basis of release, exposure, and consequence—a recommendation that is likely to go unheeded given the industry’s concern that the banning of animal drugs will increase costs and adversely impact their bottom line.151 Moreover, the FDA’s fluoroquinolone ban is incomplete; it only applies to the use of the drug in poultry, allowing its continued use in swine.152

Recognizing the need for uniformity and efficiency in the withdrawal of approval for animal antibiotics, both houses of Congress proposed bills to ban seven classes of antibiotics from animal use in 2003, 2005, 2007, and 2009.153 The bill, aptly titled the Preservation of Antibiotics for Medical Treatment Act (PAMTA), seeks to ban the subtherapeutic use in animals of seven antibiotics that are important in battling human diseases.154 If passed, the 2003, 2005, and 2007 bills would have circumvented the FDA withdrawal process altogether, yet given the history of the 2003, 2005, and 2007 bills, it is not surprising that the House has not passed the 2009 reincarnation of PAMTA.155

151 See id. at 2, 6 fig.1 (showing that Guidance documents are non-binding); Centner, supra note 55, at 18.
154 See, e.g., H.R. 962 § 101(a)(2)(A) (proposing to ban penicillin, tetracycline, macrolide, lincosamide, streptomycin, aminoglycoside, and sulfonamide).
155 See, e.g., H.R. 962 § 101(c).
156 The final action taken on the 2007 version of PAMTA introduced in the House of Representatives was one day after its introduction. THOMAS (Library of Congress), Bill Status, H.R. 962, http://thomas.loc.gov/cgi-bin/bdquery/z?d110:HR00962:@@@L& summ2=mv&status (last visited May 14, 2010) (citing its referral to House subcommittee on Feb. 9, 2007 as the last major action taken on H.R. 962). The bill was introduced by Rep. Louise M. Slaughter (D-NY), and left to languish until the end of the term. See id. The version of PAMTA introduced in the Senate underwent similar treatment; the last action on the bill was the same day it was introduced by Sen. Tom Harkin (D-Iowa). See THOMAS (Library of Congress), Bill Status, S.1460, http://thomas.loc.gov/cgi-bin/bdquery/z?d110:SN01460:@@@
Perhaps recognizing that a bill as single-minded and straightforward as PAMTA has not been politically viable, a group of legislators introduced the Food Safety Modernization Act in the House of Representatives on February 4, 2009.157 This bill, if passed, seeks to establish a Food Safety Administration (FSA) and FSA Administrator who would oversee and improve food sanitation and “food safety practices.”158 Another of the Administrator’s duties would be to “analyze the incidence of antibiotic resistance as it pertains to the food supply and develop new methods to reduce the transfer of antibiotic resistance to humans.”159 While it is admirable that Congress is addressing the issue of antibiotic use in food animals, it has yet to successfully effect any significant changes in the agricultural regime that overuses antibiotics.160 Neither the FDA nor Congress has proven itself capable of effectively dealing with growing antibiotic resistance through sub-therapeutic animal dosing; it is time for a citizens’ group to petition the FDA to withdraw approval for animal use of important human drugs and, if necessary, accomplish the same outcome through an action for judicial review.161

IV. Citizen Petitions and Judicial Review of FDA (In)action

A. FDA Procedure for Approval Withdrawal

There are two junctures in an FDA decision to withdraw approval for an animal drug.162 First, the Center for Veterinary Medicine (CVM) must determine whether to commence formal withdrawal proceedings for the drug.163 Second, if the CVM does initiate formal withdrawal proceedings, it must follow the statutory requirements for such proceedings on a drug-by-drug basis, as set out in 21 U.S.C. § 360b and 21 C.F.R. § 514.115.164 Both provisions require that the CVM consider the

158 Id. § 303(a)(1).
159 Id. § 303(a)(11).
160 See, e.g., H.R. 962.
161 See, e.g., id. Despite all the scientific research, pleas from citizens groups, and the European example, the FDA has only completed withdrawal proceedings for one drug—fluoroquinoline—in one type of animal—poultry. See FDA BAYTRIL BAN, supra note 143, at 21; Briceño, supra note 13, at 521.
162 Sundlof Letter, supra note 147.
163 Id.
available scientific data to determine whether the drug is unsafe.\textsuperscript{165} If the CVM finds a drug to be unsafe—a phenomenon that has occurred only once in the history of the FDA\textsuperscript{166}—CVM must notify the drug’s sponsor and give the sponsor an opportunity for a formal administrative hearing.\textsuperscript{167} Such hearings are preceded by notice, and consist of formal evidentiary hearings that render a decision that can later be appealed to a U.S. Court of Appeals.\textsuperscript{168} Typically, formal withdrawal proceedings, like the one that occurred in the withdrawal of fluoroquinolone approval, are prolonged and expensive.\textsuperscript{169}

\textbf{B. Citizen Petitions}

Citizens can prompt the FDA to consider withdrawal of an animal drug by submitting a “citizen petition.”\textsuperscript{170} Agency action or inaction is subject to judicial review through the Administrative Procedure Act (APA), which provides that federal agencies must allow interested parties to petition for the repeal, modification, or creation of agency rules.\textsuperscript{171} To comply with the APA, the FDA has installed a process for judicial review through the “citizen petition,” a mechanism for petitioning the FDA to “issue, change or cancel a regulation, or to take other action.”\textsuperscript{172} The agency guidelines provide FDA staff a period of “several weeks to more than a year, depending on the issue’s complexity,” to evaluate a petition before deciding whether or not to grant it.\textsuperscript{173} However, some form of response must be furnished to the petitioner within 180 days of receipt of the petition.\textsuperscript{174} The citizen petition allows the FDA to apply its agency expertise in considering the petition request for action before allowing the courts to intervene.\textsuperscript{175} While this period of evaluation is vague and leaves open the possibility that citizen peti-

\textsuperscript{166}  See Briceño, supra note 13, at 521.
\textsuperscript{167} 21 C.F.R. §§ 10.25, 514.115(b), 514.121, 514.200; Sundlof Letter, supra note 147.
\textsuperscript{168} 21 U.S.C. § 360b(h); 21 C.F.R. §§ 12.20–23, 12.80–99 (prescribing the hearing procedures), 314.235 (providing for judicial review in a U.S. Court of Appeals).
\textsuperscript{169} Sundlof Letter, supra note 147.
\textsuperscript{170} See 21 C.F.R. § 10.30.
\textsuperscript{173} U.S. Food & Drug Admin., supra note 172.
\textsuperscript{174} 21 C.F.R. § 10.30(e)(2). The response will approve the petition, deny it, or provide a “tentative response, indicating why the agency has been unable to reach a decision on the petition.” Id. § 10.30 (e)(2)(i)–(iii).
\textsuperscript{175} See 21 C.F.R. § 10.45.
tioners might be forced to wait longer than one year for a response, the citizen petition is the necessary first step for citizen action prompting the FDA to withdraw approval for certain animal antibiotics. When the FDA eventually does make a final decision on the citizen petition, that action is subject to judicial review pursuant to the APA.

C. Reviewability of Agency Action Under the APA

The APA denies reviewability to two categories of decisions: (1) decisions where the governing statute precludes review, and (2) decisions where the agency is given discretion by law. As to the first category, agency action is presumed to be reviewable under the APA except where “clear and convincing” evidence exists that Congress intended to prohibit judicial review. Arguably, agency inaction has no less a presumption of reviewability because the concerns behind the APA rules of reviewability—maintaining procedural standards and preventing careless enforcement of regulations—are equally pertinent to agency inaction. The second category of exclusion is a narrow one that precludes review only in “rare instances” where the governing statute is so broad that it does not establish standards to appraise the legality of an agency decision; in this case, the statute effectively provides “‘no law to apply.’” However, this situation is uncommon, given that governing statutes usually set out sufficient guidelines to evaluate the legitimacy of agency actions.

D. Standing

The APA allows a plaintiff challenging reviewable agency action or inaction to sue under section 704. However, the Case or Controversy Clause in Article III of the United States Constitution, as interpreted by the Supreme Court, limits who can sue in federal court under section

176 See 21 C.F.R. §§ 10.30, 10.45.
178 Id. § 701(a)(1)–(2).
182 See Sunstein, supra note 180, at 659–60.
It requires that a plaintiff have “standing” as evidenced by three characteristics: (1) the plaintiff has suffered injury-in-fact; (2) that injury is fairly traceable to the harm alleged; and (3) the injury will likely be relieved by a positive outcome.

The first requirement for standing is that the plaintiff has suffered an injury-in-fact. In *Lujan v. Defenders of Wildlife*, the Supreme Court held that a “generalized grievance” that is “undifferentiated and common to all members of the public” does not entitle a plaintiff to file suit under Article III. Rather, the plaintiff must show that “the action injures him in a concrete and personal way.” However, in *Friends of the Earth v. Laidlaw Environmental Services*, the court found sufficient standing for plaintiffs who suffered particular damage to “aesthetic and recreational values.” The court held that an environmental plaintiff could establish injury-in-fact by proving that they used a geographic area that was harmed by the defendant’s activity.

The second requirement for standing is that the concrete and personal injury suffered by the plaintiff has been caused by the agency action that is the subject of the litigation. This requirement is straightforward, stipulating merely that the court must be able to follow a logical sequence of events from the agency action to the plaintiff’s harm. Lastly, the plaintiff must show that redress is possible through a

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185 Lujan 504 U.S. at 560–61.
186 Id. at 560.
187 Id. at 575 (quoting United States v. Richardson, 418 U.S. 166, 171, 176–77 (1974)).
188 Id. at 581. But see Fed. Election Comm’n v. Akins, 524 U.S. 11, 12 (1998) (holding that the fact that the harm was “widely shared does not deprive Congress of constitutional power to authorize its vindication in the federal courts where the harm is concrete”) (citing Pub. Citizen v. Dep’t of Justice, 491 U.S. 440, 449–50 (1989)).
191 See id. at 69.
192 See Akins, 524 U.S. at 12.
favorable decision of the courts.\textsuperscript{194} This requirement is likewise uncomplicated, requiring that a court-ordered cessation of defendant’s protested conduct will solve the plaintiff’s grievance.\textsuperscript{195}

V. BEYOND CITIZEN PETITIONS: THE NEXT STEP

A. Effective Standing for APA Challenge

Standing is likely to be the biggest obstacle facing a plaintiff challenging an unfavorable decision on a Food and Drug Administration (FDA) citizen petition that requests withdrawal of approval for specified animal antibiotics.\textsuperscript{196} Difficulty showing standing will arise primarily from the difficulty in showing injury-in-fact.\textsuperscript{197} Standing is a particular burden for plaintiffs whose harm is intangible, or not yet realized, and is therefore less quantifiable for the courts.\textsuperscript{198} Despite the broadening of the injury-in-fact standard by \textit{Friends of the Earth v. Laidlaw Environmental Services}—where damage to “aesthetic and recreational values” created sufficient standing—the standing requirement for a challenge to continued FDA approval for animal antibiotics is not easy to surmount.\textsuperscript{199}

The most problematic element to achieving standing is finding a plaintiff that has suffered particularized harm.\textsuperscript{200} However, following the slightly more relaxed approach to standing espoused in \textit{Laidlaw} leaves room for a class of citizens that can identify a particular harm from an increased risk of contracting antibiotic-resistant strains of bacteria.\textsuperscript{201} For instance, any citizen with a compromised immune system would fit into a category of plaintiff with a particularized harm. Because antibiotic resistance and virulence tend to travel together, patients with acquired immune deficiency syndrome (AIDS), cancer patients undergoing chemotherapy, young children, the elderly, and any other person with a weakened immune system would likely be able to

\textsuperscript{194} Id. at 97.
\textsuperscript{195} Id.
\textsuperscript{196} See id.
\textsuperscript{197} See \textit{Lujan v. Defenders of Wildlife}, 504 U.S. 555, 560–61 (1992) (stating a generalized harm based on an injury to the public is insufficient on its own to create standing).
\textsuperscript{199} See id. at 629.
\textsuperscript{200} See \textit{Lujan}, 504 U.S. at 560 (holding that a plaintiff’s harm must be concrete and particularized).
prove a unique susceptibility to the alleged harm of contracting a drug-resistant bacterial infection.\textsuperscript{202}

Likewise, the dangers of contracting drug-resistant bacterial strains appear to be more prevalent the closer one lives to an animal feed lot.\textsuperscript{203} In\textit{Laidlaw}, the court found that citizens’ group located near the site of the challenged activity satisfied the injury-in-fact element of standing because that group’s proximity to the action caused them to suffer a particularized harm—loss of use of the land for recreational and aesthetic purposes.\textsuperscript{204} Similarly, a citizens group located near such an animal feeding operation (AFO) or concentrated animal feeding operation (CAFO) that uses antibiotic feed would suffer a particularized harm—a higher chance of contracting a drug-resistant bacteria strain from the proximity of the animals.\textsuperscript{205} By analogy, such a citizens group would have a strong argument for the particularized harm element of standing due to their close proximity to the source of the harm.\textsuperscript{206}

In a case against the FDA, the second and third requirements for valid standing—causation and redressability—should be easier to satisfy than the injury-in-fact requirement. In a case regarding harm from agricultural antibiotic use, the cause of the harm alleged is not a third party, rather the harm is directly traceable back to the FDA’s refusal to withdraw approval for animal use of antibiotics now shown to be dangerous to human health.\textsuperscript{207} The Union of Concerned Scientists’ 2002 study and the European example linking antibiotics in animal use to higher instances of drug-resistant bacteria together should satisfy Article III’s requirement of causation.\textsuperscript{208} Similarly, redressability is unambiguous in this instance because if the FDA were to withdraw approval for

\begin{footnotesize}
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\item \textsuperscript{202} See GAO, supra note 7, at 4; Barza et al., supra note 10, at S74; Leonardo Renna, Note, New York State’s Proposal to Unblind HIV Testing for Newborns: A Necessary Step in Addressing a Critical Problem, 60 Brook. L. Rev. 407, 410 (1994) (describing the immune system’s reaction to HIV and subsequent susceptibility to infection).
\item \textsuperscript{203} See Levy, supra note 70, at 145–47; see also Kristof, supra note 2 (reporting that increased rates of MRSA—a drug resistant bacteria infection—are found in Indiana towns located near hog farms that dose their animals with antibiotics).
\item \textsuperscript{204} See Laidlaw, 528 U.S. at 183–84.
\item \textsuperscript{205} See Levy, supra note 70, at 145–47. Levy’s studies of the Massachusetts farm family show that proximity to the farm alone, even without direct contact with the animals, presents a higher risk of contracting a drug-resistant infection. See id.
\item \textsuperscript{206} See Laidlaw, 528 U.S. at 183–84; Levy, supra note 70, at 145–47.
\item \textsuperscript{207} See Crossman, supra note 198, at 629 (quoting\textit{Lujan v. Defenders of Wildlife}, 504 U.S. 555, 560 (1992)) ("'[T]he injury has to be ‘fairly traceable to the challenged action of the defendant, and not the result of the independent action of some third party not before the court.’").
\item \textsuperscript{208} See Barza et al., supra note 10, at S71, S74; Centner, supra note 55, at 8.
\end{itemize}
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the seven classes of antibiotics specified, the science dictates that the amount of drug-resistant strains of bacteria would similarly diminish.209

B. A Citizen Petition to Withdraw Certain Animal Drug Approvals

The first step for an interested citizen or citizens group with standing to petition the FDA is to complete the FDA citizen petition.210 In the petition, the citizens group must specify the action requested, the grounds for the request, an environmental and economic impact statement where warranted, and certification that all information contained in the petition is true.211 In this case, the action requested is a withdrawal of approval for animal use of certain antibiotic classes, the grounds are a threat to human health, and an economic impact statement is not warranted.212 Though petitions have been filed in the past requesting the FDA to consider withdrawing approval for drugs important in human health, none has led to a direct withdrawal of approval.213 While the Center for Veterinary Medicine’s (CVM) decision to withdraw approval for fluoroquinolone was influenced by the citizen petitions it received regarding the dangers of animal antibiotic use, it did not cite those petitions as directly prompting their investigation.214 The citizen petition process should be taken to the next stage: judicial review, as provided for in the APA should be used to force the FDA to reconsider the decision not to ban the classes of antibiotics most crucial to human health for use in animals.215

To begin, a citizen group, such as the Center for Science in the Public Interest (CSPI), who filed petitions in 1999 and 2005, must submit a citizen petition requesting agency action to withdraw approval for the seven classes of antibiotics that have been identified as most crucial

209 See Centner, supra note 55, at 8; Swartz, supra note 84, at S114.
211 Id. § 10.30(b).
213 See, e.g., Citizen Petition, supra note 212; Acheson Letter, supra note 212.
to human health.\textsuperscript{216} The required “statement of grounds” section of the citizen petition should be modeled after the proposed Preservation of Antibiotics for Medical Treatment Act, which concisely lists congressional findings on the dangers of antibiotic use in animals.\textsuperscript{217} Because the FDA, in withdrawing approval, considers new scientific information not known at the time of the original decision,\textsuperscript{218} the citizen petition should include, along with the congressional findings, the conclusions of the GAO reports of 1999 and 2004, the Union of Concerned Scientists study of 2002 that appeared in \textit{Clinical Infectious Diseases}, and any other relevant and reliable scientific findings made since the approval of these seven antibiotics.\textsuperscript{219} The statement of grounds section is the most persuasive part of the petition, as it is the only part of the petition where petitioners have an opportunity to sway the agency to make a discretionary decision in their favor.\textsuperscript{220} Convincing presentation of the available science is crucial to the success of the petition.\textsuperscript{221}

Should the FDA refuse the request of the citizen petition to ban the seven classes of antibiotics, that refusal is subject to judicial review as provided for in the APA.\textsuperscript{222} The reviewing court will interpret the statute under which the FDA operates to determine if the agency action in denying the petition was arbitrary or capricious.\textsuperscript{223} This standard is meant to determine whether the FDA, among other factors, “failed to consider an important aspect of the problem, offered an explanation . . . that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view.”\textsuperscript{224}

Because of the plethora of available data on the impact of the use of animal antibiotics to human health—\textsuperscript{225} which will have been included in the grounds portion of the citizen petition—judicial review is

\textsuperscript{216} 21 C.F.R. § 10.30. Seven classes of antibiotic have been identified by the American Medical Association (AMA), the Infectious Diseases Society of America, and more than 350 health and environmental organizations as those most important to ban in the proposed Preservation of Antibiotics for Medical Treatment Act of 2007, H.R. 962, 110th Cong. (2007).

\textsuperscript{217} H.R. 962 § 2.

\textsuperscript{218} 21 C.F.R. § 514.115(b)(3)(ii).

\textsuperscript{219} GAO, \textit{supra} note 68; GAO, \textit{supra} note 7. \textit{See generally} Alliance for the Prudent Use of Antibiotics, \textit{The Need to Improve Antimicrobial Use in Agriculture: Ecological and Human Health Consequences} (Michael Barza & Sherwood L. Gorbach eds., 2002).

\textsuperscript{220} \textit{See} 21 C.F.R. § 10.30(b)(B) (the other sections—action requested, environmental impact, economic impact, and certification—do not provide an opportunity to state the reasons for the petition).


\textsuperscript{223} Id. § 706(2)(A).


\textsuperscript{225} \textit{See, e.g.}, Barza et al., \textit{supra} note 10, at S71.
a particularly useful tool in the case of animal antibiotic bans.\textsuperscript{226} The available science that favors the plaintiffs is sound; the studies were conducted by reputable research institutions over a period of years, which gave the scientists ample opportunity to gather substantial data.\textsuperscript{227} This data convincingly categorizes the findings that sub-therapeutic dosing of food animals with antibiotics endangers human health.\textsuperscript{228} Furthermore, because the data is relatively new compared to the data available when these seven antibiotics were approved for animal use,\textsuperscript{229} a reviewing court would likely consider the studies “new evidence not contained in [the original] application or not available to the Secretary until after such application was approved”—a finding that would force the FDA to reconsider its original approval.\textsuperscript{230}

Although courts generally show considerable deference to agencies in judicial challenges to their actions,\textsuperscript{231} if a court finds the new information presented in the citizen petition to pertinently change the context in which the FDA made its initial decision, the court can force the FDA to institute rulemaking procedures to address the issue.\textsuperscript{232} Of course, the court cannot dictate the actual decision an agency makes, it can only ensure that the decision is made using all the available and applicable data.\textsuperscript{233} The goal of such judicial intervention would be to prompt the FDA to create rules that reflect the science, banning the sub-therapeutic use of seven classes of antibiotics identified as vital to human health.\textsuperscript{234}

**Conclusion**

It is no longer logical, as it once might have been, to deny the effect of sub-therapeutic antibiotic dosing on the rise of drug-resistant bacteria in America.\textsuperscript{235} Unhygienic conditions on American concen-

\begin{footnotes}
\item[226] See Nidel, *supra* note 193, at 100.
\item[227] See, e.g., GAO, *supra* note 68, at 3–5; Barza et al., *supra* note 10, at S71.
\item[228] See, e.g., GAO, *supra* note 68, at 6.
\item[232] See Nidel, *supra* note 193, at 100.
\item[233] See *id*.
\item[234] See *id*.
\item[235] See Mallon, *supra* note 12, at 400 (listing the medical, scientific and governmental organizations that have conducted studies on the effects of the transferability of antibiotic-resistance from animals to humans).
\end{footnotes}
trated animal feeding operations (CAFOs) lead farmers to administer sub-therapeutic doses of antibiotics to large groups of animals, encouraging a natural selection in favor of antibiotic-resistant bacteria. These resistant bacterial strains are then transferred to humans through the animal product, through human contact with livestock, and through environmental channels such as a contaminated water supply. As studies in the United States and Europe prove, drug-resistant strains of bacteria threaten human health more than non-resistant bacteria because the former type of infections make humans sicker for longer periods of time than the latter.

Although there is evidence that a legislative ban on the use of sub-therapeutic doses of antibiotics in agriculture would mitigate drug resistant bacterial infections in the United States as it did in Europe, the American agricultural industry resists such bans because of the cost to the farmer. Accordingly, Congress has yet to pass a legislative ban on animal antibiotics, despite the introduction of four such bills in Congress. Another option to stop the increase of drug resistant bacteria is agency-driven withdrawal of approval for animal antibiotics. However, FDA-driven action has been limited to the 2005 fluoroquinolone ban and thus does not seem to be a reliable option for future regulation of animal antibiotics.

When Congress and the FDA refuse to act effectively, citizens can petition the FDA to consider withdrawing approval for animal drug use through the FDA petition process. If that petition is denied, the APA provides a mechanism for citizens to sue the FDA in order to force it to repeal, modify, or create agency rules. Plaintiffs must satisfy the Court’s prudential standing requirements. Of the three elements of standing—particularized harm, causation, and redressability—finding a plaintiff who has suffered particularized harm due to antibiotic use in

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236 See id. at 399.
238 See Barza et al., supra note 10, at S74.
239 See Centner, supra note 55, at 13, 18; Kristof, supra note 5.
241 See Briceño, supra note 13, at 529.
242 See id. at 521.
animal feed is likely to be the largest challenge.\textsuperscript{246} However, based on the expanded interpretation of standing in \textit{Laidlaw}, two likely possibilities for successful plaintiffs are patients with compromised immune systems or those living near an animal feeding operation or CAFO.\textsuperscript{247}

A citizen petition under the APA has a significant chance of success because of the considerable amount of newly available data on the negative effects of antibiotic use.\textsuperscript{248} While judges generally show deference to agencies in petitions for judicial review,\textsuperscript{249} the new information on how FDA inaction affects human health by promoting drug-resistant bacteria is likely to prompt a court to force the FDA to reconsider its inaction.\textsuperscript{250} This reconsideration could lead the FDA to follow the examples of Europe and its own action on fluoroquinolone and pass stricter regulations on animal antibiotics to better protect Americans from the ravages of drug-resistant bacteria.

\textsuperscript{246} See \textit{id.} at 560 (finding that mere generalized harm to the public is not enough to create valid standing).


\textsuperscript{248} See Nidel, \textit{supra} note 193, at 100.


\textsuperscript{250} See Nidel, \textit{supra} note 193, at 100.
THE GREAT LAKES COMPACT AND AN OHIO CONSTITUTIONAL AMENDMENT: LOCAL PROTECTIONISM AND REGIONAL COOPERATION

Nicholas T. Stack *

Abstract: The Great Lakes represent a precious natural resource that holds approximately twenty percent of all the fresh water on earth. Its sheer size creates an inherent regional connectedness among eight states and two Canadian provinces. While each of these actors rely heavily on the health of the Great Lakes for its individual economic well-being and quality of life, proper regional management of the Lakes has historically proven difficult. The passage of the Great Lakes Compact marks a significant step towards the successful management of the Great Lakes water resources. The Compact’s structure recognizes modern science and creates a unique balance of regional protection and state autonomy. Its ultimate effectiveness will depend on the states’ abilities to cooperate on a regional level. A 2008 state constitutional amendment passed in Ohio, however, demonstrates how local protectionist attitudes can erode the spirit of cooperation necessary to implement an effective regional water management regime.

Introduction

On October 3, 2008, President George W. Bush signed the Great Lakes-St. Lawrence River Basin Water Resources Compact (Great Lakes Compact or Compact) into law.1 This action formally established a comprehensive framework for the sustainable management of water resources within the Great Lakes and also marked the culmination of both four and a half years of intense interstate negotiations and three additional years of challenging intrastate deliberations.2


2 See id.
While negotiations regarding a binding regional compact have been relatively recent, in a broader historical context, the Great Lakes Compact is a product of years of judicial and legislative experience.\(^3\) For over a century, the water resources of the Great Lakes Basin have been governed by a “patchwork” of legal regimes developing throughout both federal and state governments.\(^4\) None of these previous regimes, however, have been able to adequately calm regional fears that large-scale diversions to thirsty regions and reckless local consumption of Great Lakes water would become commonplace and effectively decimate a priceless natural resource.\(^5\)

The Great Lakes Compact is a novel attempt at large-scale, sustainable resource management.\(^6\) At its core, it recognizes that each individual state depends heavily on the present and future vitality of the Great Lakes for the well-being of many of its citizens.\(^7\) Additionally, the Compact recognizes that the sheer vastness of the Great Lakes Basin creates an inherent regional connectedness among the eight Great Lakes states and two Canadian provinces.\(^8\) These formal recognitions facilitated the Compact’s primary innovations, which lie in its emphasis on widespread regional cooperation and in its foundation in modern hydrological science. Common minimum standards and individual state implementation mark such regional cooperation.\(^9\) Developments in hydrological science include the notion that a proper understanding of any watershed system must encompass both surface and ground water.\(^10\)


\(^4\) Hall, supra note 3, at 407–08, 416–35. See generally Annin, supra note 3.

\(^5\) Hall, supra note 3, at 407–08.

\(^6\) See id. at 435.

\(^7\) See Great Lakes–St. Lawrence River Basin Compact, Pub. L. No. 110–342, § 1.3.1.c–f, 122 Stat. 3739, 3742 (2008); see also Annin, supra note 3, at 17; Hall, supra note 3, at 415.

\(^8\) See Great Lakes–St. Lawrence River Basin Compact § 1.3.1.b, f; see also Hall, supra note 3, at 405.

\(^9\) See Hall, supra note 3, at 406–07. Noah Hall, assistant professor of law at Wayne State University Law School, has labeled this method of creating state environmental standards “cooperative horizontal federalism.” Id. at 406. For the Great Lakes, this translates into binding regional minimum standards—developed by the states themselves—used to govern water withdrawals while permitting the states to develop individually-tailored implementation programs. Id.

\(^10\) See Great Lakes–St. Lawrence River Basin Compact § 1.3.1.b (“The Waters of the Basin are interconnected and part of a single hydrologic system.”); id. § 1.2 (defining “Waters of the Basin” as “the Great Lakes and all streams, rivers, lakes, connecting channels and other bodies of water, including tributary ground water, within the Basin”); see also R. Timothy Weston, Harmonizing Management of Ground and Surface Water Use Under Eastern Water
These innovations are the products of four and a half years of comprehensive negotiations between representatives from each of the eight Great Lakes states, with additional input from the two affected Canadian provinces and the general public. During the negotiations, the representatives navigated around political obstacles and produced a document with the potential to effectively manage twenty percent of the world’s fresh water resources through a cooperative balance of regional regulation and individual state authority.

The Great Lakes have been labeled a “quintessential commons”; however, each individual state’s “environmental health, economic well-being and quality of life” rely heavily on the continued health of the Great Lakes system. The Compact’s negotiators understood this reliance, and at the end of four and a half years they presented the states with a management structure emphasizing both regional cooperation and individual implementation. Although generally well-received in the individual state legislatures, the regional solidarity that had initially produced the Great Lakes Compact found steadfast opposition from a small number of state legislators.

Senator Tim Grendell, a state senator from Ohio, proved to be the most vociferous opponent of the Compact. Senator Grendell’s resistance stemmed from his concern for private water rights in Ohio. Specifically, he believed that certain language contained in the Great Lakes Compact might permit a state to usurp private ground-water

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*Law Regimes*, 11 U. DENV. WATER L. REV. 239, 291 (2008) (“On their face, the Great Lakes Compact and Agreement recognize the relationship between groundwater and surface water and seek to provide a mechanism within which the basin states will manage the resource conjunctively.”).

11 See Annin, supra note 3, at 211, 218, 238.


13 Great Lakes Comm’n, supra note 12, at 9; Hall, supra note 3, at 405.

14 See e.g., Great Lakes–St. Lawrence River Basin Compact § 4.2.2 (requiring states to individually develop and implement water conservation and efficiency programs in light of the Compact’s basin-wide objectives and according to a specified timeline); see Hall, supra note 3, at 406.


16 See id.

17 Id.
rights and convert them into the public trust.18 Senator Grendell’s objec-
tions led to a two-year stalemate in the Ohio legislature that threat-
ened to derail the Compact’s ratification process.19 Ultimately, the sta-
lemate in Ohio ended with a compromise whereby he would end his
opposition to the Compact—and thereby allow Ohio to become the
seventh of eight states to ratify the Compact—in exchange for the in-
clusion of a state constitutional amendment on the next general elec-
tion ballot which, if passed, would constitutionalize existing common
law, private water rights within the Ohio Constitution.20

This Note addresses the necessity for strong regional cooperation in
the face of local protectionism by analyzing private water rights in Ohio
through the lens of the recently ratified Great Lakes Compact.21 Part I
briefly outlines the history of Great Lakes water management schemes,
reviews the magnitude of the Great Lakes Compact, and presents an
overview of the Compact’s water management system.22 Part II details
the history and scope of Ohio common law water rights and discusses
section 19b of the Ohio Constitution, including Senator Grendell’s un-
derlying concerns.23 Part III considers the impact of Senator Grendell’s
actions on the future effectiveness of the Great Lakes Compact, and dis-
cusses the local utility of section 19b.24

I. The Road to an Effective Regional System of Governance

The Great Lakes Compact represents the culmination of decades of
ecological, political, and economic challenges for the Great Lakes
region.25 It also represents the culmination of years of unprecedented
cooperation between eight states and two Canadian provinces.26

18 Id.
20 See id.
21 See Great Lakes–St. Lawrence River Basin Compact, Pub. L. No. 110–342, § 1.3.1.f, 1.3.2.a, 122 Stat. 3739, 3742–43 (2008); see also Annin, supra note 3, at 27 fig.2.2 (demon-
strating the worst-case scenario with regard to poor resource management through a
graphical representation of the regression of the Aral Sea, which has effectively lost ninety
percent of its volume since 1960).
22 See infra Part I.
23 See infra Part II.
24 See infra Part III.
pollution of Lake Erie that led to the Cuyahoga River in Cleveland catching fire); see also
Annin, supra note 3, at 257 (“Negotiators of the agreements persevered despite a merry-
A. The Great Lakes and the Urgency for Action

As the availability of potable water around the world continues to deteriorate, establishing the Great Lakes Compact as a viable system of cooperative regional management became urgent for the continued existence of the Great Lakes. In 2007, the United Nations (U.N.) issued a statistic noting that by the year 2025 over 1.8 billion people will be living in regions with “absolute water scarcity.” Additionally, the U.N. predicts that two-thirds of the world’s population will be experiencing “water stress” by the same date. Predictions like these, coupled with the Nova Group’s attempt to export tankers filled with fresh Great Lakes water to Asia, strongly suggest the need for the Great Lakes Compact to provide an effective anti-diversion and sustainable resource management system within the Great Lakes Basin.

The United States, with sprawling desert subdivisions and golf courses, is no exception to the predicted water crisis. The U. S. Government Accountability Office predicts that by 2013, thirty-six states will be faced with local, regional, or statewide water shortages. These shortages are likely to be accompanied by severe economic, environmental, and social impacts. Many of these states occupy the South and the Desert Southwest—the same regions that have witnessed unbridled growth over the past ten years. The population of the Great Lakes

go-round of governors and premiers, divisive regional differences, conflicting water philosophies, and merciless mission fatigue.”).

26 See Annin, supra note 3, at 257 (“Completing the process was an impressive collaborative feat that bound together ten different jurisdictions that cross an international boundary and stretch from the Iron Range of northern Minnesota to the rushing waters of the St. Lawrence in Québec.”).


28 See UNESCO, supra note 27.

29 Id.


31 See GAO, supra note 27, at 5.

32 Id.

33 Id.

states, however, has been largely stagnant. After the 2010 census, it is widely expected that the Great Lakes states will lose as many as fifteen congressional seats. Consequently, thirsty constituents are likely to have more power in Congress, the branch of government responsible for ratifying, amending, or denying interstate compacts.

The Great Lakes system as a whole is a priceless natural resource to the citizens of Ohio and to the citizens of the other Great Lakes states and Canadian provinces. The lakes hold approximately twenty percent of all the fresh surface water on earth. Annually the lakes themselves support a $4 billion fishing industry, $3 billion shipping industry, and a robust tourism industry. The tourism industry includes large public beaches and some of the greatest fishing opportunities anywhere in North America. Furthermore, within the Great Lakes Basin, manufacturing, tourism, and agriculture generate upwards of $438 billion in revenue each year. Ohio itself boasts two major industrial cities on the Great Lakes—Cleveland and Toledo—and also maintains approximately 312 miles of shoreline along the southern edge of Lake Erie. Ultimately, the economic and psychological reliance of the eight Great Lakes states and two Canadian provinces on the continued health of the Great Lakes ecosystem, including the preservation of adequate water levels, is critical.

While the Great Lakes states and provinces appear to have an abundance of the world’s most precious resource—fresh water—they are also “surrounded on three sides by a wide variety of water scarcity and

35 See U.S. Census Bureau, supra note 34.
37 U.S. Const. art. I, § 10, cl. 3.
38 See Annin, supra note 3, at 17.
39 Great Lakes Comm’n, supra note 12, at 9.
40 Annin, supra note 3, at 17.
41 Id. at 40.
42 Great Lakes Comm’n, supra note 12, at 28.
44 See Hall, supra note 3, at 415.
conflict.”

This parched reality—recently highlighted by an Ontario company’s attempt to export tankers full of Great Lakes water to Asia—coupled with the general uncertainty surrounding the effects of global climate change on water levels, contributed to a regional sense of urgency at the turn of the twenty-first century. Additionally, modern hydrological science makes the interconnectedness of the entire watershed—including ground water—difficult to deny. Ultimately, both the fear of unilateral diversions by individual states and provinces, and a more advanced understanding of watershed hydrology emphasized the need for a cooperative regional management system with strong support from the individual states.

B. Brief History of Great Lakes Management Schemes

Historically, attempts to manage the Great Lakes system have taken the shape of international agreements, federal legislation, judicial decisions, and interstate pacts. Regardless of form, these past attempts all proved inadequate to harness the sheer vastness of the Great Lakes. While all of the Great Lakes states share a common dependence on Great Lakes water, these past attempts at large-scale management failed to take notice of each state’s individual “water personality.” The Great Lakes Compact, however, has created a workable system of water management through a systemic flexibility that recognizes both regional similarities and individual differences among the eight Great Lakes states. This modern approach—based on both modern science and

45 See Annin, supra note 3, at 7.
46 See Annin, supra 3, at 42; Univ. of Wis. Milwaukee, supra note 30. For an in-depth historical overview of the various Great Lakes diversion projects, see Annin, supra note 3.
48 See Univ. of Wis. Milwaukee, supra note 30. See generally Winter, supra note 47.
49 See generally Annin, supra note 3; Hall, supra note 3.
50 See Annin, supra note 3, at 213 (Michigan is adamantly opposed to diversions, but balks at limitations on its own in-Basin consumptive use. New York has major hydropower considerations. Illinois is worried about maintaining its U.S. Supreme Court-mandated water allocation that keeps metropolitan Chicago alive. . . . Minnesota has been the most progressive water jurisdiction in the Basin—Indiana decidedly less so—with Wisconsin, Ohio, and Pennsylvania somewhere in between.”).
51 See Great Lakes–St. Lawrence River Basin Compact, Pub. L. No. 110–342, § 3.1, 122 Stat. 3739, 3745 (2008) ("it is the purpose of this Compact to provide for the joint exercise of such powers of sovereignty by the [Great Lakes–St. Lawrence River Basin Water Resources Council] in the common interests of the people in the region, in the manner and to the extent provided in this Compact.") (emphasis added); id. § 4.2.2 ("each Party shall develop its own Water conservation and efficiency goals and objectives consistent with the Basin-
past political experiences—requires continued good-faith efforts at cooperation from individual states to successfully manage the Basin’s resources.52

Originally, in an effort to resolve boundary disputes and cursorily manage bordering waterways, the United States and Canada adopted the Boundary Waters Treaty of 1909.53 Commentators have frequently used two ways to point out the weaknesses of the Boundary Waters Treaty as an effective management tool.54 First, under the Treaty, individual withdrawals and diversions that significantly impaired water levels in a shared body of water can be addressed and remedied; however, because the size and volume of the Great Lakes generally ensures that the effects from a solitary diversion is negligible, the more pertinent issue—which the Treaty fails to address—stems from the cumulative effect of numerous withdrawals.55 Additionally, the Treaty only covers those bodies of water that border both nations.56 This is a fatal flaw given the fact that Lake Michigan—a vital part of the Great Lakes system—is not regarded as a “boundary water” under the Treaty.57 Also, the enforcement mechanism for the Treaty, the International Joint Commission, exists as a dormant body that can only hear a matter after it receives specific approval from the U.S. Senate.58

The U.S. Supreme Court entered the Great Lakes management fray after Illinois, plagued by outrageous sanitation issues around Chicago in the late 1800s and early 1900s, reversed the Chicago River.59 This action diverted a substantial amount of water out of Lake Michigan and into the Mississippi River watershed.60 After an unsuccessful

wide goals and objectives); see also Hall, supra note 3, at 439–40 (stating that water use inside the Basin is managed by individual states with limited input from other states, but a diversion of Great Lakes water outside the Basin is subject to a more stringent regional review process).

52 See Great Lakes–St. Lawrence River Basin Compact § 1.2 (including “tributary groundwater” within the purview of “Waters of the Basin”); id. § 1.4 (addressing the Compact’s ability to adapt to future scientific progress); see also Hall, supra note 3, at 454 (asserting that cooperative horizontal federalism requires a “tremendous political will and collective action” in its implementation).


54 See Annin, supra note 3, at 71.
55 See id.; Hall, supra note 3, at 417.
56 See Annin, supra note 3, at 71; Hall, supra note 3, at 416–17.
57 See Annin, supra note 3, at 71; Hall, supra note 3, at 417.
58 See Hall, supra note 3, at 418.
59 See Annin, supra note 3, at 86, 90.
60 Id., at 86; see Missouri v. Illinois, 200 U.S. 496, 517 (1906).
nuisance challenge from Missouri regarding the wastes that were flowing into its waterways from Chicago, Wisconsin—joined by Minnesota, Michigan, Ohio, Pennsylvania, and New York—brought a subsequent suit alleging that the diversion caused historically low water levels in Lake Michigan. In an apparent recognition of the imminent health risks of the situation, the court upheld the diversion with significant volume limitations. Commentators have noted that while the Court did not halt the diversion, the limitations it imposed on the flow volume demonstrated a preference for the protection of regional interests in the Great Lakes—particularly the individual interests of other states that rely on the continued vitality of the Great Lakes system.

During the course of the twentieth century, a patchwork of common law and statutory doctrines emerged across the Great Lakes region, and they magnified the ineffectiveness of the various regional management schemes. Ultimately, these inconsistencies laid the groundwork for the Great Lakes Charter in 1985. The Great Lakes Charter—created at the behest of the Council of Great Lakes Governors—espoused many of the ideals of the modern Great Lakes Compact: conservation of lake levels, protection of the ecosystem, and a cooperative management system. The Charter acknowledged the Great Lakes Basin as one hydrologic system, recognized the dangers of diversion and consumptive uses, and established the importance of information sharing and tracking large withdrawals. More importantly, the Great Lakes Charter served as an important step toward an effective management scheme and did so by recognizing the need to act with a “continuing spirit of comity and mutual cooperation.”

61 Wisconsin v. Illinois, 278 U.S. 367, 399–400 (1929); see Annin, supra note 3, at 92; Hall, supra note 3, at 420.
62 Wisconsin v. Illinois, 278 U.S. at 421; see Annin, supra note 3, at 92–93; Hall, supra note 3, at 421.
63 See Hall, supra note 3, at 422.
64 See id. at 427.
67 Great Lakes Charter, supra note 65, at 1.
68 See id.
69 See id.; see also Annin, supra note 3, at 73.
was a non-binding agreement that never bore the effective regulatory fruit that many signatories had envisioned.\footnote{See Hall, \emph{supra} note 3, at 426.}

In 1986, Congress passed the Water Resources Development Act (WRDA), which federally mandated that no water could be diverted outside the Great Lakes system without unanimous approval of each Great Lakes state.\footnote{See Pub. L. No. 99-662, § 1109, 100 Stat. 4082, 4230 (1986) (codified as amended at 42 U.S.C. § 1962d-20 (2000)); Annin, \emph{supra} note 3, at 79; Hall, \emph{supra} note 3, at 428–29.} Some scholars believe that despite its bite, WRDA, as it applies to the Great Lakes, stands on shaky constitutional grounds.\footnote{See Annin, \emph{supra} note 3, at 204. It has been argued that WRDA violated the Commerce Clause, the right to due process, and other constitutional provisions because it allowed a governor to dictate water policy in another jurisdiction by applying his gubernatorial veto. \textit{Id.} A compact, however, must be approved by Congress, which has the power to “regulate commerce”; therefore, the Great Lakes Compact would likely preclude a challenge based on the Commerce Clause. Hall, \emph{supra} note 3, at 451.} Additionally, commentators have cited as its shortcomings the absence of standards, judicial review provisions, a private right of action, and a narrow scope.\footnote{See Annin, \emph{supra} note 3, at 80; Hall, \emph{supra} note 3, at 429–30.} In any event, as federally derived legislation, WRDA does not comfortably mirror the needs of the eight Great Lakes states and two provinces.\footnote{See Hall, \emph{supra} note 3, at 431.}

In 2001, the Great Lakes governors signed The Great Lakes Charter Annex (Charter Annex), a corollary to the Great Lakes Charter signed in 1985.\footnote{See Council of Great Lakes Governors, \textit{The Great Lakes Charter Annex: A Supplementary Agreement to the Great Lakes Charter} (June 18, 2001), available at http://www.cglg.org/projects/water/docs/GreatLakesCharterAnnex.pdf [hereinafter Charter Annex].} Although non-binding, the Charter Annex demonstrated a more thorough understanding of both the interconnected hydrology of the Great Lakes system as well as the political realities and necessities of interstate cooperation.\footnote{Charter Annex, \emph{supra} note 75, at 2; see Hall, \emph{supra} note 3, at 433. Directive #3 of the Great Lakes Charter Annex addresses the prevention of water loss through return flow and the “implementation of environmentally sound and economically feasible water conservation measures.” Charter Annex, \emph{supra} note 75, at 2.} The Charter Annex introduced key concepts into the basin-management framework such as return flow, conservation, and ecological impacts.\footnote{See Charter Annex, \emph{supra} note 75, at 3 (including “tributary groundwater” in the definition of “Waters of the Great Lakes Basin”). It also recognized ground water as an important part of the watershed, and it applied to both diversions and consumptive uses.\footnote{Charter Annex, \emph{supra} note 75, at 3; see Hall, \emph{supra} note 3, at 431, 433–34.}}

\footnote{Charter Annex, \emph{supra} note 75, at 2; see Hall, \emph{supra} note 3, at 433. Directive #3 of the Great Lakes Charter Annex addresses the prevention of water loss through return flow and the “implementation of environmentally sound and economically feasible water conservation measures.” Charter Annex, \emph{supra} note 75, at 2.}
C. The Great Lakes Compact Management Scheme

The Compact is one part of a two-part system of water management for the Great Lakes. The first part is the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement. This document is described as a “good faith agreement” among the eight Great Lakes states and two Canadian provinces. This agreement is to be implemented in Ontario and Quebec through provincial laws and in the United States through the Great Lakes Compact.

The final version of the Great Lakes Compact included numerous provisions in an attempt to foster regional cooperation, and ultimately protect, conserve, restore, improve, and effectively manage the waters and water-dependent-natural resources of the Basin. As adopted by the eight states, this version included a general ban on new water diversions with limited exceptions and a requirement that states regulate in-Basin water uses. Additionally, the Compact established a uniform regional standard for evaluating proposed water withdrawals and required the states to adopt a water-conservation plan. The Compact, in its final form, also allowed for water to be shipped out of the Basin in containers of less than 5.7 gallons without being classified as a diversion. The Illinois diversion at Chicago is specifically exempted.

The Compact created the Great Lakes-St. Lawrence River Basin Water Resources Council (the Council), comprised of the governors of each of the Great Lakes states, as a vehicle for making regional decisions.
remains the prerogative of the individual states to regulate new or increased in-Basin water withdrawals and to ensure that uses overall are reasonable. Regional review and unanimous approval through the Council is required, however, for all intra-Basin diversions above 5 million gallons per day and diversions to communities outside the Basin, but within a county that straddles the Basin’s border.\(^88\) Additionally, the Council has the ability to create rules and bring enforcement actions under the Compact.\(^89\) The Council also has broad authority to conduct joint scientific research and to assemble an accurate database of withdrawals.\(^90\)

Particularly relevant for the purpose of this Note is the fact that the waters of the Great Lakes are defined as including rivers and ground water within the Basin.\(^91\) Despite the inclusion of ground water as “Waters of the Basin,” the Great Lakes Compact specifies its effect on existing rights in section 8.1.\(^92\) The language of the Compact attempts to clarify that “[n]othing in this Compact shall be construed to affect, limit, diminish or impair any rights validly established and existing as of the effective date of this Compact under State or federal law governing the Withdrawal of Waters of the Basin.”\(^93\) Appearing to address Senator Grendell’s private water rights concerns directly, the Compact further states that “[n]othing contained in this Compact shall be construed as affecting or intending to affect or in any way to interfere with the law of the respective Parties relating to common law Water rights.”\(^94\) Finally, with respect to existing rights, the Compact states that:

An approval by a Party or the Council under this Compact does not give any property rights . . . nor shall it be construed to grant or confer any right, title, easement, or interest in, to or over any land belonging to or held in trust by a Party; neither does it authorize any injury to private property or inva-

\(^88\) Id. §§ 4.9.2(c), 4.9.3.
\(^89\) Id. § 3.3; Hall, supra note 3, at 444.
\(^90\) Great Lakes–St. Lawrence River Basin Compact § 3.2; Hall, supra note 3, at 444.
\(^91\) Great Lakes–St. Lawrence River Basin Compact § 1.2. Section 1.2 of the Great Lakes Compact defines “Waters of the Basin or Basin Water” as “The Great Lakes and all streams, rivers, lakes, connecting channels and other bodies of water, including tributary groundwater, within the Basin.” Id.
\(^92\) Id. § 8.1.
\(^93\) Id. § 8.1.1.
\(^94\) Id. § 8.1.2.
sion of private rights, nor infringement of federal, State or local laws or regulations . . . .

Despite what appear to be safeguards written into the Compact itself, Senator Grendell’s opposition to the Compact remained steadfast as he believed that the Compact was a means for some environmentalists to convert all the water in the Great Lakes Basin into public property, including ground water.

D. One Resource: The Science of Surface Water and Ground Water

As with most scientific disciplines, the general understanding of both hydrology and geology continues to evolve. As more sophisticated technology has become available, scientists have been able to unearth some of the complexities inherent in a hydrologic system, including the interrelation between surface water and ground water.

Historically, the development of a scientific understanding regarding the interrelationship of surface and groundwater had been elusive. In a 1998 report, the United States Geological Survey (USGS) explained that the relationship between the two may have been difficult to grasp for so long because “[m]ovement of water in the atmosphere and on the land surface is relatively easy to visualize, but the movement of ground water is not.” Furthermore, the USGS noted that although a massive amount of research and engineering had been devoted to the development of water resources and water supply, most past work had focused on either surface water or ground water while generally ignoring any relationship between the two. Indeed, at one time, many believed that surface water and ground water were two dis-

95 Id. § 8.1.4.
97 See GREAT LAKES COMM’N, supra note 12, at 16.
98 See Winter, supra note 47, at III.
99 See id.
100 Id. at 3. A sentiment echoed by the Ohio Supreme Court in 1861 when it evaded the possibility that surface water and ground water could be a single resource by stating: “Because the existence, origin, movement and course of such waters, and the causes which govern and direct their movements, are so secret, occult and concealed, that an attempt to administer any set of legal rules in respect to them would be involved in hopeless uncertainty, and would be, therefore, practically impossible.” Frazier v. Brown, 12 Ohio St. 294, 311 (1861).
101 See Winter, supra note 47, at III.
tinct entities capable of being neatly compartmentalized into separate fields of study.\textsuperscript{102}

In its report, the USGS described the modern understanding of the connection between surface water and ground water: “Nearly all surface-water features (streams, lakes, reservoirs, wetlands, and estuaries) interact with ground water. . . . As a result, withdrawal of water from streams can deplete ground water or conversely, pumpage of ground water can deplete water in streams, lakes, or wetlands.”\textsuperscript{103} The use of ground water for the public water supply, irrigation, and industry is widespread and the effect of withdrawing water from shallow aquifers connected to surface-water bodies can be significant.\textsuperscript{104} Ultimately, surface water and ground water are a single resource.\textsuperscript{105}

The lack of understanding regarding the interrelation between surface water and ground water has not been isolated within the scientific community.\textsuperscript{106} In fact, the distinction between surface water and ground water spilled over into the legal arena.\textsuperscript{107} Without an informed scientific understanding to support the connection between surface water and ground water, many state judiciaries developed separate doctrines to govern the property rights associated with each entity.\textsuperscript{108} Slowly, however, those judicial barriers have broken down as modern science has demonstrated that both surface water and ground water are interrelated, vital parts of any watershed system.\textsuperscript{109} In order to effectively manage any water system, or the property rights contained therein, an administrating authority must understand this relationship and have the power to curb both surface water abuses and ground water excesses.\textsuperscript{110}

\textsuperscript{102} See id.
\textsuperscript{103} Id.
\textsuperscript{104} Id. at 14. Additionally, the report declared that “[t]he effects of pumping a single well or a small group of wells on the hydrologic regime are local in scale. However, the effects of many wells withdrawing water from an aquifer over large areas may be regional in scale.” Id.
\textsuperscript{105} Id.
\textsuperscript{106} See Gamer v. Town of Milton, 195 N.E.2d 65, 67 (Mass. 1964); Pixley v. Clark, 35 N.Y. 520, 527 (1866); Frazier v. Brown, 12 Ohio St. 294, 311 (1861).
\textsuperscript{107} See Weston, supra note 10, at 240.
\textsuperscript{108} Id.
\textsuperscript{109} See Cline v. Am. Aggregates Corp., 474 N.E.2d 324, 327 (Ohio 1984) (Holmes, J., concurring); see also Weston, supra note 10, at 241.
\textsuperscript{110} See Weston, supra note 10, at 292.
II. Ohio’s Common Law Water Rights and Article I, Section 19b

A. Common Law Water Rights in Ohio

Without a “one resource” understanding of surface water and ground water, the Ohio Supreme Court in 1861 adopted the English “absolute ownership” rule to private ground water rights in *Frazier v. Brown*.\(^{111}\) Stemming from the English law regarding the rule of capture in *Acton v. Blundell*, it was believed that because ground water cannot be adequately observed, there could be no liability for interference with another’s use.\(^{112}\) The *Frazier* Court held that the rules of law applicable to surface streams as between riparian owners are not at all applicable to subterranean waters as between adjacent property owners.\(^{113}\) This ruling recognized an absolute ownership right in a landowner’s ground water.\(^{114}\) The law remained indifferent to the use of that ground water.\(^{115}\) *Frazier* effectively codified the absolute ownership rule into the Ohio common law and guaranteed an Ohio landowner an absolute right to whatever ground water he could capture from his land.\(^{116}\)

As technology progressed and the science underlying the movement and storage of water in aquifers and other underground tributaries became better understood, *Frazier* quickly became an antiquated, yet predictable system of private ground water rights.\(^{117}\) The judicial system rarely keeps pace with scientific progress, and the implementation of the “one resource” understanding was gradual at best.\(^{118}\) In Ohio, the absolute ownership rule laid down in *Frazier* endured for over a century, continuing to subject one property owner’s right to the use of the water underlying his or her property to the superior pumping system of another landowner.\(^{119}\)

\(^{111}\) *Frazier*, 12 Ohio St. at 297.


\(^{113}\) 12 Ohio St. at 297. The *Frazier* Court specifically adhered to the maxim “*cujus est solum ejus est usque ad coelum et ad inferos.*” Id. at 304 (stating, when translated, “for whoever owns the soil, it is theirs up to heaven and down to hell”).


\(^{115}\) *Frazier*, 12 Ohio St. at 312.

\(^{116}\) Salim & Hall, supra note 114, at 2–3.

\(^{117}\) See *Weston*, supra note 10, at 246.

\(^{118}\) See id. at 245.

Despite a lack of realistic utility to Ohio landowners, the government did not attempt to overrule *Frazier* until 1984.\textsuperscript{120} Specifically, the court in *Cline v. American Aggregates Corp.* overruled *Frazier* and replaced its absolute ownership rule with the reasonable use rule from the Restatement (Second) of Torts.\textsuperscript{121} Demonstrating the scientific progress regarding the hydrology of ground water, the *Cline* court held that a landowner who withdraws ground water from the land and uses it for beneficial purposes may be subject to liability for interference with the use of water by another if: (1) the withdrawal unreasonably causes harm to a proprietor of neighboring land through lowering the water table or artesian pressure; (2) the withdrawal of ground water exceeds the proprietor’s reasonable share of the annual supply or total store of ground water; or (3) the withdrawal of the ground water has a direct and substantial effect upon a watercourse or lake and unreasonably causes harm to a person entitled to the use of its water.\textsuperscript{122}

In the *Cline* decision, Justice James Celebrezze stated that one reason for the English absolute ownership rule appeared to have been that it afforded protection to the property rights of landowners whose activities resulted in ground water diversions.\textsuperscript{123} Furthermore, Justice Celebrezze documented the inherent injustice of the English rule in that it affords protections only to the most powerful landowner or landowner with the most resources, leaving any property owner dependent on the use of local ground water left with no reasonable recourse against “their more powerful neighbors.”\textsuperscript{124}

Ohio’s adherence to the reasonable use doctrine—a water management system not foreign to Ohio or other Great Lakes states in terms of surface water—received a more refined definition in *McNa-

\textsuperscript{120} Cline, 474 N.E.2d at 327.
\textsuperscript{121} See id.
\textsuperscript{122} Id. at 324.
\textsuperscript{123} Id. at 326.
\textsuperscript{124} Id. (quoting Katz v. Walkinshaw, 74 P. 766, 769 (Cal. 1903)).

The field is open for exploitation to every man who covets the possessions of another or the water which sustains and preserves them, and he is at the liberty to take that water if he has the means to do so, and no law will prevent or interfere with him, or preserve his victim from attack. The difficulties to be encountered must be insurmountable to justify the adoption or continuance of a rule which brings about such consequences.”

*Id.* A stereotypical tragedy of the commons in the local sense, the problem created by the rule of capture is easily amplified when the locality encompasses an entire region and an interstate watershed is involved. *See* William Goldfarb, *Watershed Management: Slogan or Solution?*, 21 B.C. ENVTL. AFF. L. REV. 483, 484 (1994).
mara v. Rittman, a ruling by the Ohio Supreme Court on a certified question from the U.S. Court of Appeals for the Sixth Circuit. The court in McNamara was asked whether Ohio recognizes a property right in the amount of ground water beneath a landowner’s property that is necessary to the use and enjoyment of the owner’s home. The court answered this question in the affirmative and further stated that governmental interference with that right can constitute an unconstitutional taking.

In McNamara, the Ohio Supreme Court refined the reasonable use rule from Cline and reexamined the logic behind the English rule in Frazier. According to the McNamara Court, the Cline standard assumes nonliability: a landowner was able to withdraw as much ground water as he can put to beneficial use. Additionally, the court realized that the hundred years of science between Frazier and Cline enabled the court to reliably determine the effect of one landowner’s water use on another landowner’s property. Solidifying a landowner’s property interests in the reasonable use of ground water, the McNamara Court specifically stated that “title to property includes the right to use the ground water beneath that property. . . . That right is one of the fundamental attributes of property ownership and an essential stick in the bundle of rights that is part of title to property.”

The McNamara Court went further than simply confirming and clarifying the existence of a property interest in the reasonable use of ground water, it also analyzed the issue in terms of the Takings Clause. Justice Pfeifer reiterated that the term “property” encompasses more than crude, physical objects, but instead refers to the entire “group of rights inhering in the citizen’s [ownership].” Article I, section 19 of the Ohio Constitution requires compensation to be made for private property taken for public use, whether physical or an intangible interest appurtenant to the premises. Ground water rights are “knowable and protectable,” and the advancement of scientific knowledge can ensure the protection of a landowner’s property interests in ground wa-

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126 Id. at 643.
127 Id.
128 Id.
129 Id. at 644.
130 Id. at 644–45.
131 McNamara, 838 N.E.2d at 644.
132 Id. at 645.
133 Id. (quoting United States v. Gen. Motors Corp., 323 U.S. 373, 378 (1945)).
134 Id. (citing Smith v. Erie R.R. Co., 16 N.E.2d 310, 310 (Ohio 1938)).
ter to the same degree that the riparian doctrine protects the interests of landowners adjacent to a stream.135 Ultimately, the Ohio Supreme Court held that ground water rights are indispensable rights appurtenant to property and protected from government invasion.136

While Ohio’s conversion to the “reasonable use” doctrine for ground water appears to have been relatively recent,137 Ohio has maintained a compensable property right against the interference with surface water for at least a century.138 Riparian rights have been considered to be within the purview of section 19 of the Ohio Bill of Rights, which addresses eminent domain.139 The Ohio Supreme Court has held that “[r]iparian rights are property, within the purview of section 19 of the Bill of Rights, of which the owner cannot be deprived without just compensation, though taken for, or subjected to, a public use.”140

While both riparian and ground water rights in Ohio appeared to have been firmly established by the Ohio Supreme Court, the Great Lakes Compact prompted an acute backlash among some Great Lakes state politicians, including Ohio state Senator Grendell, who feared that the Compact’s monumental nature and mounting inertia would trample the rights of individual states and their citizenry.141

B. Ohio’s Issue 3: Constitutional Amendment Protecting Water Rights

On November 4, 2008, a record number of Ohio voters cast ballots during a historic general election.142 In addition to choosing a new president, Ohio voters also had the opportunity to vote on Issue 3. It appeared on the Ohio ballot as a proposed constitutional amendment “to

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135 Id. at 646 (quoting Cline v. Am. Aggregates Corp., 474 N.E.2d 324, 326 (Ohio 1984)).
136 Id. at 645; see Salim and Hall, supra note 114, at 3.
137 See Katz v. Walkinshaw, 74 P. 766, 771 (Cal. 1903) (rejecting the absolute ownership rule for ground water); Meeker v. City of East Orange, 74 A. 379, 385 (N.J. 1908) (same).
139 Id.; see OHIO CONST. art. I, § 19.
140 Balliett, 63 N.E. at 86.
protect private property rights in ground water, lakes and other water-
courses.” 143 Officially, the amendment, which Ohioans adopted over-
whelmingly, added section 19b to article I of the Ohio Constitution. 144

While Issue 3 may have appeared facially as a simple means to con-
stitutionally protect a landowner’s property interest in both ground wa-
ter and adjacent watercourses, it actually represented the culmi-
nation of a long-standing, intrastate political debate revolving around the
Great Lakes Compact. 145 Proposed by state Republican Senator Tim
Grendell, section 19b provided Ohio’s legislature with a politically ac-
ceptable compromise to his steadfast opposition to the Compact itself,
and paved the way for Ohio to become the seventh state to approve the
Great Lakes Compact. 146

1. Amendment Overview

Article XVI of the Ohio Constitution prescribes the method for
amending the Ohio Constitution. 147 Either branch of the Ohio legis-
lature may propose a constitutional amendment. 148 If the proposed
amendment language is agreed upon by three-fifths of the members of
each house and filed with the secretary of state at least ninety days prior
to an election, the amendment can be included on the next state-wide
ballot. 149

Senator Grendell’s constitutional amendment appears in Article I
of the Ohio Constitution. 150 Article I contains Ohio’s Bill of Rights. 151
Similar to its federal counterpart, the Ohio Bill of Rights enumerates
certain individual freedoms and liberties upon which the state govern-

144 Id. Close to seventy-two percent of the Ohio electorate voted to adopt the measure.
Ohio Sec’y of State, State Issue 3: November 4, 2008, http://www.sos.state.oh.us/SOS/elec-
tions/electResultsMain/2008ElectionResults/issue3_110408.aspx (last visited May 14, 2010).
145 See Provance, supra note 19.
146 See Jim Provance, Ohio Likely to Become 7th State to OK Lakes Pact, TOLEDO BLADE, May 23,
147 Ohio Const. art. XVI, § 1.
148 Id.
149 Id. Using his influence in the senate, Senator Grendell managed to keep the Great
Lakes Compact legislation tabled in a committee until a sufficient majority of the house—
which had overwhelmingly passed the Compact twice—voted to place the proposed
amendment on the ballot. See Provance, supra note 19.
150 Ohio Const. art. I, § 19b.
151 Id. art. I.
ment may not infringe.\textsuperscript{152} Ohio citizens now enjoy the additional fundamental protection of their private property rights in ground water, lakes, and other watercourses.\textsuperscript{153}

Essentially, section 19b of the Ohio Constitution serves as an affirmation of common law water rights that have been enumerated by the Ohio Supreme Court.\textsuperscript{154} Section 19b codifies within the Ohio Bill of Rights a property owner’s interest in the reasonable use of the ground water underlying the property owner’s land. It also codifies a riparian property owner’s interest in the reasonable use of the water in a lake or watercourse on or flowing through the owner’s riparian land.\textsuperscript{155}

While no strong opposition to the amendment ever materialized before the general election, groups such as the League of Women Voters voiced some opposition to the measure.\textsuperscript{156} Arguments against adoption of the amendment focused on the amendment as an unnecessary addition to the Ohio Constitution, a document that many believe should espouse general principles.\textsuperscript{157} Furthermore, rulings by the Ohio Supreme Court have firmly established the property interest of land owners in their ground and surface water.\textsuperscript{158} Additionally, because the Great Lakes Compact is an agreement attempting to manage an expansive Great Lakes region and requires cooperation among many different states, some critics feared that codifying these rights in the Ohio Constitution would prevent the state from having any future flexibility.\textsuperscript{159} Specifically, constitutional codification could prevent the future adaptations

\textsuperscript{152} \textit{Id.} Among these fundamental rights are the right to assemble, bear arms, freedom of speech and the press, prohibitions against unreasonable searches and seizures, trial by jury, the writ of habeas corpus, and even the right to alter, reform, or abolish government. \textit{Id.} art. I, §§ 2–5, 8, 11, 14.

\textsuperscript{153} \textit{Id.} art. I, § 19b.

\textsuperscript{154} See \textit{id.;} Cline v. Am. Aggregates Corp., 474 N.E.2d 324, 327 (Ohio 1984) (establishing a landowner’s interest in the reasonable use of the ground water beneath his or her land); \textit{see also} McNamara v. Rittman, 838 N.E.2d 640, 644–45 (Ohio 2005) (establishing that the reasonable use of ground water is a stick in the bundle of property rights and that governmental interference can constitute a taking).

\textsuperscript{155} \textit{OHIO CONST.} art. I, § 19b.


\textsuperscript{157} \textit{OHIO BALLOT Bd., supra} note 156, at 1.

\textsuperscript{158} \textit{Id.}

\textsuperscript{159} \textit{Id.;} \textit{see} Provance, \textit{supra} note 19.
to scientific discoveries or regional concerns. During debate over the amendment in the Ohio House, Representative Joyce Beatty also expressed her concern over a provision in the amendment that prevented any other section of the Ohio Constitution from interfering with those enumerated water rights. Other legislators maintained that Grendell’s criticisms of the Great Lakes Compact were overblown and that interstate cooperation would not affect private water rights in Ohio.

On the contrary, Senator Grendell believed the amendment to be a necessary safeguard for Ohio’s natural resources and a guaranteed way to maintain the stability of Ohio’s economy through state protection of private water rights. Senator Grendell labeled the amendment a “firewall,” protecting private water rights in Ohio from “any future effort to use the ‘held in trust’ language of the compact to create uncertainty or to assail private water rights of Ohioans in the Great Lakes basin.” Senator Grendell’s opposition to the Great Lakes Compact has also invoked more than private water rights. Additionally, Senator Grendell has objected to the Great Lakes Compact on the ground that Ohio would be giving up its territorial sovereignty to a regional body.

Ultimately, the compromise to include the amendment on the 2008 general election ballot ended a stalemate in the Ohio legislature and allowed Ohio to become a signatory to the Great Lakes Compact. Senator Grendell’s concerns and public opposition to the Compact in its original form, however, effectively stalled the ratification of the Compact for over two years, signaling an unwillingness to submit Ohio to regional standards with regard to diversions and large-scale consumptive uses.

See Provance, supra note 19.

See id. Demonstrating her skepticism regarding the amendment, Rep. Beatty stated during the debate that, “We didn’t want to find that six years later we had opened up Pandora’s Box. It could conceivably be very embarrassing to the state of Ohio.” Id.

See Scott, supra note 96.


See Provance, supra note 146.


Id.; see also Henry, supra note 141.

Provance, supra note 146.

This led some commentators to refer to him as a “grinch” during the negotiations. See Tom Henry, Ohio Lags Behind in Great Lakes Pact, Toledo Blade, May 18, 2008, http://
2. Amendment Process

When the Great Lakes Compact documents were finalized in Milwaukee, Wisconsin on December 13, 2005, many people in Ohio were optimistic that their state would become the first of eight states to adopt the Compact; thereby solidifying Ohio’s place as a regional leader in the sustainable management of the Great Lakes.\(^\text{169}\) In fact, the drafting negotiations themselves were led by former Ohio governor Bob Taft.\(^\text{170}\) Originally, Governor Taft hoped that this historic agreement to comprehensively manage and protect the Great Lakes would be a settled issue in his home state by late 2006.\(^\text{171}\) In May 2008, two years after Governor Taft left office, the legislation to implement the Compact—which had been officially passed in six other states—remained an unsettled issue in the Ohio legislature.\(^\text{172}\)

The process for enacting a compact has been described as a “political obstacle course” because it requires extensive negotiations, uniform ratification by each state, and federal approval.\(^\text{173}\) The negotiations to create the Great Lakes Compact spanned five years and included representatives from each of the Great Lakes states, Ontario, and Quebec, and orchestrated periods for public comment.\(^\text{174}\) These negotiations were vitally important because the document that emerged could not be amended by any one state without opening the entire document to further compromises and negotiations.\(^\text{175}\) Individual state legislators had to cope with an unfamiliar legislative process—that is, one that demands


\(^{171}\) Id.


\(^{173}\) See Hall, supra note 3, at 454.

\(^{174}\) See Annin, supra note 3, at 210–11, 218.

\(^{175}\) See Hall, supra note 3, at 454. In order to earn congressional approval, a compact’s language cannot vary from state to state. See id. Any desire by one state to amend the document would require more negotiations and, if any states had already adopted the document, could further require the draft document to be reopened and subject to the steadfast opinions of local state politicians. See id.
regional consensus and does not allow for last minute additions or subtractions to either language or substance of the document.\textsuperscript{176}

When the Compact legislation was initially introduced to the Ohio House of Representatives on April 27, 2006—just four months after the Great Lakes governors deemed the negotiated agreement ready for the states—Senator Grendell objected to the Compact as an inferior piece of legislation.\textsuperscript{177} His concerns were based on two flaws that he believed were in the Compact.\textsuperscript{178} First, he believed that the State of Ohio would be relinquishing its sovereignty by submitting itself to a plan that required unanimous approval from the governors of each of the eight Great Lakes states in cases involving communities straddling the Great Lakes watershed divide.\textsuperscript{179} To Senator Grendell, communities that rest partly inside the Great Lakes Basin and partly outside the Basin represented a hydrologic gray area, and he desired a less rigorous standard in order to provide Great Lakes water to all of the residents in those particular communities.\textsuperscript{180} Second, and most importantly, he believed that certain language in the Compact represented a Trojan horse with the potential to convert all Basin water, including non-navigable surface water and ground water, into the public trust.\textsuperscript{181} Specifically, if the Compact was enacted in its original form, he believed sections 1.3.1(a) and 8.1 created an ambiguity ripe for contractual interpretation in an out-of-basin federal court in the District of Columbia.\textsuperscript{182} For these rea-

\textsuperscript{176} See id.


\textsuperscript{178} Audio recording: Senator Tim Grendell, meeting held by the Geauga County Farm Bureau (Feb. 15, 2008), available at \url{http://blog.cleveland.com/metro/2008/04/great_lakes_water_compact_weig.html} [hereinafter Geauga County Farm Bureau].

\textsuperscript{179} See Geauga County Farm Bureau, supra note 178.


\textsuperscript{181} See Scott, supra note 96; Geauga Lake Farm Bureau, supra note 178.

\textsuperscript{182} See Geauga Lake Farm Bureau, supra note 178. Section 1.3.1(a) of the Compact states: “The Waters of the Basin are precious public natural resources shared and held in trust by the States”; however, section 8.1 asserts: “Nothing contained in this Compact shall be construed as affecting or intending to affect or in any way to interfere with the law of the respective Parties relating to common law Water rights” and “[a]n approval by a Party or the Council under this Compact does not give any property rights, nor any exclusive
sons, he initially managed to lead a successful campaign in the Ohio Senate against the Compact’s original form.  

In an attempt to cure what he viewed as a fatal flaw in the Compact language, Senator Grendell subsequently introduced a separate, altered version of the Compact legislation. His proposal excepted “tributary ground water” and “non-navigable surface waters” from section 1.3.1(a) of the Compact, required only a majority vote to divert water to the non-Basin portion of straddling counties, and required only a majority vote to divert water within the Basin. Unfortunately, by the time Senator Grendell presented his version, four states had already ratified the Compact, making it not only undesirable, but also nearly impossible to re-open the document and still be able to pass it in a reasonable amount of time. Many Great Lakes lawmakers remained concerned over the effect of the 2010 census on the Compact’s chances for congressional approval.

With political pressure mounting both from other states and from fellow Ohio legislators, Senator Grendell’s campaign against the Compact’s form took a different approach: compromise. In June 2008,

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183 Henry, supra note 169.
185 Compare S.B. 291 §§ 1.3.1(a), 4.9.2(c) (iv), 4.9.3(g), with Great Lakes–St. Lawrence River Basin Compact, §§ 1.3.1(a) (containing no exception for “tributary ground water” and “non-navigable surface waters”), 4.9.2(c) (requiring unanimous Council approval for new or increased intra-basin transfer for consumptive uses averaging 5 million or more gallons per day), 4.9.3(g) (requiring unanimous Council approval for proposals to divert water to the non-Basin portion of a straddling country).
186 Scott, supra note 96.
187 See Henry, supra note 114.
Senator Grendell proposed a joint resolution that would place a state constitutional amendment on the ballot to codify certain private water rights. In turn, he agreed to end his opposition to the Compact legislation. After initially struggling to reach the required number of votes in the Ohio House, the measure ultimately passed. Subsequently, the Compact swiftly passed both the Ohio Senate and House. Governor Ted Strickland signed the legislation on June 27, 2008 with an effective date of December 8, 2008.

III. Implications of Ohio’s Constitutional Amendment

The passing of the Great Lakes Compact into law marks a significant step towards the successful management of the Great Lakes water resources; however, the Compact’s effectiveness will depend on the states’ abilities to cooperate on a regional level while curbing local protectionist attitudes. The Compact’s structure—coupling regional minimum standards with individual state implementation—creates a unique balance of regional protection and state autonomy. Because the Compact ultimately holds each individual state accountable for its own actions (or inaction), overzealous local protectionism can only obstruct the effective management of such a large regional resource. The Great Lakes Compact is the product of close to five years of negotiations between eight states and their respective constituencies with input from the two affected Canadian provinces and the general public. The document produced by these negotiations represents a triumph of cooperation and compromise. Despite this triumph and the excitement that ensued, the Compact became moored in intrastate de-
bates for close to three more years.\textsuperscript{199} While legitimate local skepticism toward such a comprehensive regulatory scheme can be substantively beneficial to an individual state, the drawn-out ratification process in Ohio—where Senator Grendell’s skepticism was seen by many as dubious at best—signals an unwillingness to work in regional concert for the protection of the Great Lakes.\textsuperscript{200} Ultimately, the ratification process in Ohio, which culminated in an amendment to Ohio’s constitution, erodes the spirit of cooperation that was established by the Compact negotiations and will be necessary to manage the Great Lakes on a regional level.\textsuperscript{201}

Each of the individual state actors involved in the Great Lakes Compact rely on the continued vitality of the Great Lakes water resources to a tremendous degree and both modern hydrological science and predictions of future water scarcity—in the United States and abroad—demonstrate the pressing need for an effective and comprehensive management scheme.\textsuperscript{202} While Ohio case law has emphasized the role of science in the evolution of private water rights, and federal reports have demonstrated that close to seventy-five percent of the United States will face water stress, Senator Grendell attempted to shield local consumptive uses of groundwater from the purview of the Compact.\textsuperscript{203} In February 2008, Senator Grendell, while explaining his original position on the Great Lakes Compact to the Geauga County Farm Bureau, also stated that he failed to see the urgency regarding the current situation.\textsuperscript{204} Despite Senator Grendell’s concerns, the effectiveness of the Great Lakes Compact as a workable system of regional water management remains vital to the maintenance and future prosperity of this precious natural resource.\textsuperscript{205}

\textsuperscript{199}See Council of Great Lakes Governors, supra note 1.

\textsuperscript{200}See Scott, supra note 96.

\textsuperscript{201}See S. J. Res. 8, 127th Gen. Assem., Reg. Sess. (Ohio 2008); Ohio Sec’y of State, supra note 144.

\textsuperscript{202}See UNESCO, supra note 27; GAO, supra note 27, at 5.

\textsuperscript{203}See Cline v. Am. Aggregates Corp., 474 N.E.2d 324, 328 (Ohio 1984) (Holmes, J., concurring); McNamara v. Ritten, 838 N.E.2d 640, 644 (Ohio 2005); GAO, supra note 27, at 5; Geauga County Farm Bureau, supra note 178.

\textsuperscript{204}See Geauga County Farm Bureau, supra note 178. For Senator Grendell, the “sky is not falling,” the “Great Lakes aren’t going shallow,” and “global warming is not drying us into a dust bowl.” Id.

A. Threat of Usurpation of Private Water Rights

The primary motivation behind Senator Grendell’s opposition to the Compact and subsequent constitutional proposal was that the Compact will convert all of the “Waters of the Basin” to public trust property.\(^{206}\) The thrust of this argument and Senator Grendell’s subsequent desire to either exempt tributary ground water and non-navigable surface water from the Compact or give voters an opportunity to codify water rights in the Ohio Constitution, ignored both the modern understanding of hydrology and settled Ohio case law.\(^{207}\)

Senator Grendell believed that the Ohio common law regarding private water rights remained in flux because of the relatively recent adoption of the Restatement rule of ground water rights.\(^{208}\) He further suggested that Ohio Supreme Court jurisprudence was an unstable platform for the protection of individual rights.\(^{209}\)

It is true that common law ground water rights in Ohio have traditionally been governed by the absolute ownership rule of capture.\(^{210}\) After science revealed the “secret” nature of ground water, the Ohio Supreme Court officially adopted the modern scientific understanding of the notion of ground water by overruling the absolute ownership rule and replacing it with the reasonable use rule—the same rule that has traditionally governed riparian water rights in the Eastern United States.\(^{211}\) A single significant change to the nature of ground water rights in the past 150 years can hardly be described as an unstable foundation for the protection of private water rights.\(^{212}\)

In this sense, the Supreme Court of Ohio modified the common law to meet a modern scientific understanding, thereby shedding the absolute ownership rule from Ohio precedent.\(^{213}\) This type of flexibility exercised by the court is exactly the type of flexibility the Great Lakes Compact attempts to employ in this new era of water management.\(^{214}\) The

\(^{206}\) See id. § 1.3.1(a); Provance, supra note 15.

\(^{207}\) See Cline, 474 N.E.2d at 328; McNamara, 838 N.E.2d at 644; Weston, supra note 10, at 241.

\(^{208}\) See Geauga County Farm Bureau, supra note 178.

\(^{209}\) Id.

\(^{210}\) See Frazier v. Brown, 12 Ohio St. 294, 297 (1861).

\(^{211}\) See Cline, 474 N.E.2d at 326, 327.

\(^{212}\) See id. at 327; Frazier, 12 Ohio St. at 297.

\(^{213}\) See McNamara v. Ritten, 838 N.E.2d 640, 644 (Ohio 2005).

Supreme Court of Ohio’s adoption of the reasonable use standard simply solidified a well-established scientific understanding into Ohio law.215

The reasonable use standard has been an official doctrine in the Ohio common law since 1984.216 In this sense, no Ohio landowner has enjoyed the absolute ownership of ground water in twenty-five years.217 The private property right that Senator Grendell has championed since 2006 is not a tangible interest in real property, but instead the right to the reasonable use of the ground water beneath a landowner’s property.218 A landowner does not actually own the water beneath his land, but instead he owns the right to reasonably use the water beneath his land.219 Because a property owner in Ohio does not own the ground water beneath his land, but instead enjoys a right to reasonably use that resource, Senator Grendell’s attempt to except ground water and non-navigable waterways from the purview of the Great Lakes Compact was misguided and ultimately ignored the modern “one resource” understanding of hydrology.220 Despite Senator Grendell’s insistence that the Compact language is ambiguous, it in no way usurps the right of a landowner to reasonably use the ground water and non-navigable surface water under or on his land.221

B. Local Utility of Section 19b

On its face, section 19b appears to constitutionally protect a landowner’s appurtenant right to the reasonable use of surface and ground water; however, because the Ohio Supreme Court already solidified that right in its private property jurisprudence, section 19b is a needless addition to the Ohio Constitution and will yield no real benefit for landowners.222 Instead, section 19b’s codification of Ohio’s common law water rights may hinder the recently ratified management regime by preventing future flexibility.223 Ultimately, the amendment’s lack of utility simply undermines the spirit of cooperation necessary to manage the Great Lakes in both the present and the future.224

215 See McNamara, 838 N.E.2d at 644.
216 See Cline, 474 N.E.2d at 327.
217 See id.
218 See McNamara, 838 N.E.2d at 645.
219 See Cline, 474 N.E.2d at 327.
220 See id.; Weston, supra note 10, at 242.
222 See Ohio Const. art. I, § 19b; Cline, 474 N.E.2d at 327; McNamara, 838 N.E.2d at 645.
223 See Provance, supra note 19.
224 See Great Lakes–St. Lawrence River Basin Compact § 1.3.1(b), (d).
In the short run, section 19b will have no effect on the current system of private water rights in Ohio. The amendment merely codifies the existing common law doctrines that have been prudently adopted by the Ohio Supreme Court. While the common law is certainly not an overly dynamic creature, its ability to cautiously adjust traditional legal philosophies in order to meet modern challenges—including the incorporation of modern scientific understandings—makes the state judiciary and common law preferable to a constitutional amendment for maintaining an informed stability with regard to private water rights. Constitutional codification of section 19b ensures that these individual state policies will be difficult to adjust without a subsequent constitutional amendment, effectively anchoring Ohio’s private water rights regime in the present.

While the reasonable use doctrine that governs Ohio’s private water rights would have been unlikely to change in the near future regardless of the enactment of section 19b, effective management of the Great Lakes through the Great Lakes Compact requires broad regional cooperation and the ability to adapt to scientific realities. Section 19b’s nominal practical value underscores its significance as a political nuisance, undercutting the spirit of regional cooperation necessary to establish an effective sustainable management scheme in the Great Lakes region.

Conclusion

While legitimate local skepticism toward a comprehensive regional regulatory scheme can be substantively beneficial—that is, ensuring that certain constituencies are not completely disregarded—Senator Grendell’s narrow interpretation of the Compact’s negotiated form illustrates how ill-founded local protectionism can undermine the spirit of cooperation necessary for the sustainable management of a massive natural resource. Senator Grendell’s initial objections appear to ignore both

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225 See Ohio Const. art. I, § 19b; Cline, 474 N.E.2d at 327.
226 See Ohio Const. art. I, § 19b; Cline, 474 N.E.2d at 327.
227 See Cline, 474 N.E.2d at 327, 328 (Holmes, J., concurring); Frazier v. Brown, 12 Ohio St. 294, 297 (1861). Arguably, the state legislature is the optimal venue for maintaining this informed stability; however, the codification of section 19b acts as a restraint on the legislature’s ability to adapt to future scientific advancements.
228 See Ohio Const. art. XVI, § 1. The overwhelming passage of the amendment by the Ohio electorate suggests that the electorate will almost certainly be aszealous in refusing to alter section 19b. See Ohio Sec’y of State, supra note 144.
modern hydrological science and the reasonable use doctrine as adopted by the Ohio Supreme Court. 230 Furthermore, the Ohio electorate’s adoption of Senator Grendell’s proposed constitutional amendment will have a negligible effect on private property rights in Ohio, but effectively signals to other Great Lakes states a defiant local attitude toward the comprehensive management of the Great Lakes system.

The ratification of the Great Lakes Compact does not represent an abdication of state sovereignty to a strong central authority or an underhanded attempt by the states to usurp ownership of private ground water rights. The main purpose of the Great Lakes Compact is to “protect, conserve, restore, improve, and effectively manage the Waters and Water Dependent Natural Resources of the Basin under appropriate arrangements for intergovernmental cooperation and consultation.” 231 The Great Lakes Compact attempts to accomplish this goal by allowing each State the freedom and flexibility to individually tailor implementation schemes while also holding each state accountable to the region for its failures. 232 Ultimately, the effectiveness of the Compact—and the future health of the Great Lakes—requires that the eight states make all necessary attempts to avoid excessive local protectionism and maintain a workable atmosphere of regional cooperation.

230 See Cline, 474 N.E.2d at 327 (adopting the reasonable use doctrine as laid out in the Restatement (Second) of Torts with regard to ground water); see also Winter, supra note 47, at 1 ("[T]he importance of considering ground water and surface water as a single resource has become increasingly evident.").

231 Great Lakes–St. Lawrence River Basin Compact § 1.3.2(a).

232 See Hall, supra note 3, at 406–07.