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COWS, CONGRESS, AND CLIMATE CHANGE: AUTHORITY AND RESPONSIBILITY FOR FEDERAL AGENCIES TO END GRAZING ON PUBLIC LANDS

Marya Torrez*

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INTRODUCTION

Grazing on public lands has been a matter of considerable controversy for more than a century.¹ As the environmental, health, and additional negative impacts of raising non-human animals for food become more and more apparent and well-known, it has become clearer that using public lands in this way is contrary to public interest. While the number of cows and sheep grazing on public lands is small compared to the overall number of animals raised for food in the United States, grazing is the single largest use of federal lands, covering more than 250 million acres,² including ninety percent of Bureau of Land Management (BLM) lands.³ And, in addition to the well-known environmental impacts—such as degradation of the land, destruction of ecosystems, and pollution of the water—animal agriculture is a significant producer of greenhouse gases, which contribute to global climate change.⁴

Congress and the federal agencies responsible for managing our federal lands have long recognized the detrimental impact that grazing has on the lands and the environment. This knowledge has been part of the underlying basis for the various statutes and regulations that have been promulgated to deal with grazing.⁵ These attempts show a continually increasing desire to protect the natural environment and to address the damage caused by grazing.

Currently, as much as two-thirds of the rangeland is in unsatisfactory condition.⁶ Nevertheless, the use of the range for grazing continues, and the

4. See Debra L. Donahue, The Western Range Revisited: Removing Livestock from Public Lands to Conserve Native Biodiversity 126 (Univ. of Okla. Press 1999) (asserting that grazing has indirect consequences on the environment, including emission of greenhouse gases).
federal agencies responsible for overseeing the rangeland show little sign of stopping or significantly reducing this use of the land.  

The pressure to maintain grazing on public lands is substantial. Ranching is a significant part of United States history—particularly in the West—and Congress, agency leadership, federal land managers, and judges are loath to upset this tradition. While environmental considerations have significantly affected numerous uses of federal lands, grazing has continued to be a prominent use of hundreds of millions of acres of land despite its negative environmental impact. Not only is BLM failing to address the perilous health and environmental implications of global warming, but it is also subsidizing and contributing to them through its decisions on how to use the public lands. As explained in detail below, however, ending grazing on public lands is arguably within the power of BLM, the Forest Service, and other federal agencies. Ending grazing on public lands has also become an environmental imperative.

Part I of this article will address the substantial negative environmental impact of raising animals for food. Focusing on global climate change, Part I will address the need for federal agencies overseeing public lands to consider this impact in their planning decisions. Part II will address the laws passed by Congress to govern grazing on public lands, the backdrop that led to their enactment, and how they have evolved to make clear that protection of the natural environment is a primary objective of federal rangeland management. Part III of the article will analyze court decisions recognizing both the authority and the obligation of the public agencies overseeing grazing to take significant steps to protect the rangeland and the surrounding environment. Part IV will analyze authority requiring federal agencies to address global climate change, most significantly the Supreme

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Court’s decision in Massachusetts v. EPA. Finally, Part V will address obstacles to reform and ways to address those obstacles.

I. PUBLIC POLICY NECESSITY OF ENDING GRAZING: IMPACT ON SOCIETY OF RAISING ANIMALS FOR FOOD

As noted above, the negative impact on the range from grazing has been well known since the nineteenth century. Grazing has had detrimental impacts on the soil and water, as well as the plant and animal species on the range. The negative impacts of grazing include: “[R]eplacement of native perennial grasses by shrubs and annual weeds, soil erosion, degradation of stream channels, loss of riparian vegetation, water pollution, [and] destruction of wildlife habitat.”\(^\text{10}\) BLM itself has long recognized the harmful impacts of grazing. In 1974, the District Court for the District of Columbia pointed to BLM's report indicating the negative environmental impacts of grazing:

Uncontrolled, unregulated or unplanned livestock use is occurring in approximately 85 percent of the State and damage to wildlife habitat can be expressly [sic] only as extreme destruction. Overgrazing by livestock has caused invasion of sagebrush and rabbitbrush on meadows and has decreased the amount of meadow habitat available for wildlife survival by at least 50 percent. The reduced meadow area has caused a decline in both game and non-game population. In addition, there are 883 miles of streams with deteriorating and declining wildlife habitat, thus making it apparent, according to the report, that grazing systems do not protect and enhance wildlife values.\(^\text{11}\)

But the negative impacts of grazing go far beyond that. Grazing implicates critical issues of planetary and public health. Raising animals for food, in particular cows, has serious implications for our well-being as a society. Animal agriculture is one of the primary contributors to global climate change. A landmark study conducted by the United Nations Food and Agriculture Organization concluded that animal agriculture emits eighteen percent of human-caused global greenhouse gases, more than the

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10. Feller, supra note 9, at 1128
entire transportation sector. Other experts have concluded that this number fails to take into account the true impact of raising animals for food and that animal agriculture contributes closer to fifty-one percent of all global greenhouse gases. Regardless, the number is significant and government agencies should be acting to address this dire threat, not contributing to it.

Cows in particular release significant amounts of methane and nitrous oxide, which are incredibly potent greenhouse gases. Methane has about twenty-three times the greenhouse effect of carbon dioxide; nitrous oxide has 296 times the effect. Raising cows for food accounts for more global warming emissions than other foods. In addition to the impact of greenhouse gases emitted directly by animals, animal agriculture in the United States contributes to climate change through methane released from fertilizer and manure decomposition; land use changes for grazing and to produce food for the animals; land degradation; and fossil fuels burned for fertilizer, animal food production, and transportation.

Although much of the research has focused on cows in concentrated animal feeding operations (also called factory farms or CAFOs), that does not mean that grazed animals are not also contributing. In the United States, the majority of cows raised for food spend the beginning of their lives on pasture and their last few months of life in a factory farm. While part of our vision of grazing on rangeland in the American West involves idyllic pastures with happy cows spending their lives eating grass until they are killed, that is not the reality. Cows that end up in factory farms are the same cows that graze on public lands. So using public lands for grazing contributes to the factory farm system, which has numerous issues beyond global climate change, including significant issues of animal cruelty, pollution, and public health.

15. Id.
16. Steinfeld, supra note 12, at 86.
Moreover, the precise impact of grazing is significant. The Union of Concerned Scientists has looked specifically at the impact of pasture-raised cows.19 Because these cows gain weight slower, they emit methane and nitrous oxide for a longer period of time and, therefore, emit more.20 The impact is greater when the rangeland is in poor quality, as the majority of public rangelands are. Cows grazing on poor quality pasture produce four times more methane than those eating mostly grain.21 Other commentators have estimated the output of grazing cattle just on public lands in the United States to be as much as 258,329,206,200 liters of methane per year.22 This is equal to the greenhouse gas emissions of 705,342 passenger vehicles, 8,578,933 barrels of oil, or electricity consumed by 447,687 homes.23 Grazing also contributes to climate change because rangelands in poor quality are less able to store carbon.24 Healthy grasslands and forests could mitigate much of the impact of climate change by sequestering carbon.25 In the case of overgrazing, “land degradation is a sign of decreasing re-absorption of atmospheric [carbon dioxide] by vegetation re-growth. In certain regions, the related net [carbon dioxide] loss may be significant.”26 Scientists in India looked at the global warming impact of stopping grazing in the Barsey Rhododendron Sanctuary.27 They found that removing cows (as well as a small number of sheep, buffalo, and yaks) from the area in question resulted in a difference of 585,000 tons of carbon over a twelve year period, which they calculated to translate into the equivalent of 2,142,000 tons of carbon dioxide.28

20. Id. at 3.
23. Id.
25. Id.
28. Id. at 17.
Another study in China similarly found that ending grazing for twenty years in the Leymus chinensis (grasslands in northern China) could increase carbon storage in the soil almost thirty-six percent.29 The authors concluded, “By implementing [grazing exclusion], the temperate grasslands of northern China could facilitate significant [carbon] and [nitrogen] storage on decade scales in the context of mitigating global climate change.”30

As the authors of the India study note, the “[v]alue of this carbon sequestration is not limited to the geographic area of study site but rather a contributor to global reduction in net carbon emissions.”31 Taking action in the United States to address the contribution that animals raised for food make to global climate change would have another international impact: It would encourage other nations to take similar measures.32 This is particularly important because the global warming impact of animals raised for food in other countries is generally greater than in the United States.33

In addition, continuing to use public lands for grazing worsens other impacts of global climate change:

The particular impacts consequent to livestock grazing have ever-growing significance in light of observed and predicted climate change impacts in the Southwest including higher temperatures; reduced snowpack and earlier snowmelt; longer droughts; more erratic, but more intense precipitation events rushing over drought-stressed lands and further incising channels; vegetation die-offs; and the spread of invasive, exotic species. . . . The grazing cannot meet the meaning of a FONSI, i.e., no significant impacts; and it cannot be justified in an [Environmental Impact Statement] vis-a-vis reasonable alternatives of no grazing or greatly reduced grazing. The impacts are too many, serious, irreversible, and unavoidable given the current levels, frequency, and geographic extent of the livestock grazing.34

30. Id. at 667.
31. Bhagwat, Diwan, and Venkataramani, supra note 27, at 17.
33. Id.
Global climate change threatens to end life, as we know it, with the impacts falling most heavily on the poor and inhabitants of the global south, and jeopardizes global stability. The well-known impacts of global climate change include: retreating glaciers, rising sea levels, thawing tundra, and increases in hurricanes and other severe weather events.35 “Natural disasters, droughts, and other changes brought about by global warming ‘are likely to become a major driver of war and conflict.’ . . . Global temperature shifts may also hasten the speed at which infectious diseases emerge and reemerge.”36 Additional effects include “severe and irreversible changes to natural ecosystems.”37 Some regions of the world “are likely to suffer yield declines of major crops and some may experience food shortages and hunger. . . . The poor and disadvantaged, and more generally less advanced countries are the most vulnerable to the negative consequences of climate change because of their weak capacity to develop coping mechanisms.”38

All of these factors, along with the authority analyzed below, provide significant reason for the United States to take the implications of raising animals for food seriously and for BLM to end grazing on public lands. The next section looks at the statutory authority governing grazing on public lands and the underlying reasons for the enactment of these statutes. It also argues that ending grazing is consistent with this authority.

II. HISTORY OF GRAZING ON PUBLIC LANDS AND ATTEMPTS TO ADDRESS THE DAMAGE: STATUTORY AUTHORITY FOR ENDING GRAZING

As noted previously, grazing is the most ubiquitous commercial use of public lands. The majority of land used for grazing is managed by BLM within the Department of the Interior. A small amount of rangeland is also managed by the Forest Service within the Department of Agriculture. In addition to BLM and Forest Service lands (including wilderness lands), some grazing takes place in national parks, national monuments, and

38. Steinfeld, supra note 12, at 80–81.
national wildlife refuges.\textsuperscript{39} Although this article deals primarily with BLM decisions regarding management of the range and legal challenges to those decisions, these laws and arguments apply equally to the Forest Service and other federal agencies.

For much of U.S. history, there were few attempts to regulate the use of public lands for grazing.\textsuperscript{40} Entities raising cows and sheep for food basically had free range to use federal lands.\textsuperscript{41} This use of the public lands was judicially sanctioned in the 1890 case of \textit{Buford v. Houtz}. The Supreme Court held that “there is an implied license, growing out of the custom of nearly a hundred years, that the public lands of the United States, especially those in which the native grasses are adapted to the growth and fattening of domestic animals, shall be free to the people who seek to use them where they are left open and unenclosed, and no act of government forbids this use.”\textsuperscript{42}

However, at the turn of the twentieth century, as the damage caused by grazing started to be recognized, there were attempts to limit and regulate the practice. The Forest Service started charging fees for grazing in 1905.\textsuperscript{43} There were several legislative attempts to address the damage caused by grazing.\textsuperscript{44} However, these attempts were largely unsuccessful. It was only after the environmental and economic devastation caused by the Dust Bowl, which was made worse by the long-term use of rangelands for grazing, that Congress finally acted.\textsuperscript{45} In 1934, Congress responded with the Taylor Grazing Act (TGA). It attempted to limit and regulate grazing on public lands and to address some of the environmental issues that had arisen from the indiscriminate use of the lands for grazing.

Congress made additional attempts, through several subsequent major pieces of legislation, to address the environmental degradation caused by grazing on federal lands. Forty years after the TGA, Congress enacted the Federal Land Policy Management Act and the Public Rangelands

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\textsuperscript{40} See Coggins & Lindeberg-Johnson, supra note 1, at 27.

\textsuperscript{41} Id.

\textsuperscript{42} Buford v. Houtz, 133 U.S. 320, 326 (1890).

\textsuperscript{43} Debra L. Donahue, \textit{The Western Range Revisited: Removing Livestock from Public Lands to Conserve Native Biodiversity} 27–28 (1999).

\textsuperscript{44} Id. at 33–35.

\textsuperscript{45} See Coggins & Lindeberg-Johnson, supra note 1, at 47 (analyzing Congress’ motivation to promulgate the Taylor Grazing Act).
\end{flushright}
Improvement Act. While each of these authorities assumes that grazing will continue to take place on public lands, none of them requires the use of the lands for that purpose. Likewise, each of them makes clear that preservation of the range and other environmental values are of paramount importance. Concurrently, provisions in other laws that bind federal agencies, including the National Environmental Policy Act, the Endangered Species Act, the Wild & Scenic Rivers Act, the Clean Air Act, and the Clean Water Act, illustrate that other countervailing policies must take precedence. Grazing is only one of many potential use of the rangeland and, because of its detrimental effects on humanity and the world, should be more stringently regulated.

A. Taylor Grazing Act

Despite its name, the TGA was not passed to authorize grazing on federal lands: grazing was already taking place on federal lands and had been for more than a century. The TGA provided BLM with the authority to issue permits for grazing and obtain “reasonable fees” from ranchers who wanted to use the public lands. As explained in further detail below, obtaining adequate compensation for the right to use federal lands for grazing has been an ongoing and largely unsuccessful process. The TGA also made clear that permits to graze did not convey any “right, title, interest or estate” in the land itself. Courts have consistently held that no legal rights inhere in grazing permits. This history makes clear that, regardless of traditional use for grazing, the lands remain the property of the United States for it to do as it sees fit.

Most importantly, the TGA authorized the Secretary of the Interior to establish grazing districts on lands “which in his opinion are chiefly valuable for grazing and raising forage crops.” Therefore, by the plain

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47. Id.
48. See, e.g., United States v. Fuller, 409 U.S. 488, 494 (1973) (establishing that Congress did not intend to vest property rights when BLM issues permits); Swim v. Bergland, 696 F.2d 712, 719 (9th Cir. 1983) (contrasting tribal rights to land with those not inherent in permits issued to non-Indians); Osborne v. United States, 145 F.2d 892, 896 (9th Cir. 1944) (affirming that Congress may extend land rights while executive agencies may not); Diamond Bar Cattle Co. v. United States, 168 F.3d 1209, 1217 (10th Cir. 1998) (maintaining that licenses to graze on federal lands are revocable and have never vested property rights); Alves v. United States, 133 F.3d 1454 (Fed. Cir. 1998) (explaining that fee simple land owners do not have a compensable property interest in adjacent federal lands).
49. 43 U.S.C. § 315 (emphasis added).
text of the legislation, nothing in the TGA requires the Secretary to establish grazing districts, and grazing districts should only be established on lands that are not suitable for other uses. Moreover, the law gave the Secretary the authority to withdraw land from grazing entirely if it could be utilized for a more valuable or suitable use.\textsuperscript{50}

The Department of the Interior has long recognized that grazing is not intended to be the primary use of the land. In response to a challenge regarding water rights, the Department stated in 1966:

\begin{quote}
The Taylor Grazing Act is not just a grazing statute. On the contrary, it is a statute providing for an inventory of public lands and for the disposal of the lands in accordance with their highest use. Thus, section 7 of the act . . . provides for the classification of lands in grazing districts which are more valuable for agriculture than for forage or more valuable for any other use than that provided under the act (grazing). . . . Note that in the scheme of classification grazing is the lowest use.\textsuperscript{51}
\end{quote}

In reality, however, the TGA did little to impact the way that rangelands were managed. Neither BLM nor the Grazing Service, the federal office in the Interior Department responsible for enforcing the law before BLM, ever undertook the necessary appraisal of the lands to determine whether they were “chiefly valuable for grazing.”\textsuperscript{52} Most of BLM-managed lands in the West were simply classified as grazing districts, grazing continued, and some narrow restrictions were placed on entities using the lands. In addition to the permit requirement to use public lands for grazing, the number of animals that could graze on a given plot of land was limited. But, for the most part, grazing continued, the damage to the lands and the surrounding environment continued, and BLM did little to stop the practice.\textsuperscript{53}

Even if lands had been found to be chiefly valuable for grazing, as the law requires, there is evidence that removing cows and sheep from lands

\begin{flushleft}
\textsuperscript{50} Id. § 315f.
\textsuperscript{52} See Schlenker-Goodrich, supra note 8, at 179 (explaining the Secretary of the Interior’s broad discretion when determining if land is suitable for grazing); Debra L. Donahue, \textit{Western Grazing: The Capture of Grass, Ground, and Government}, 35 ENVT. L. 721, 755 (2005).
\textsuperscript{53} Donahue, supra note 52, at 755–56.
\end{flushleft}
devastated by grazing could restore the ecosystems of the range.\textsuperscript{54} Additionally, these lands “are now valued for a wealth of noncommodity resources, including hundreds of thousands of archaeological sites; habitat for thousands of species of wildlife; spectacular desert, mountain, and canyon scenery; and recreational opportunities.”\textsuperscript{55} This reality calls into question whether any public lands could truly be classified as chiefly valuable for grazing today.

As a result of BLM’s failure to fully implement all the provisions of the law, the TGA did very little to achieve its intended purpose of improving the environmental health of the range. The TGA still governs grazing on public lands, but subsequent statutes and regulations have added requirements for environmental considerations and protections. Later statutes make even clearer that public lands should not be managed for grazing alone, particularly if there are more beneficial uses.

\textit{B. Federal Land Policy Management Act}

The Federal Land Policy Management Act (FLPMA) was passed in 1976, and, among numerous other provisions, amended or superseded and built upon certain portions of the TGA.\textsuperscript{56} It is the primary law governing BLM activity and deals with the management of the public lands generally. The law provides a number of policy statements and directives to indicate Congress’ strong environmental preference, and to aid BLM in overseeing the lands. Individually and taken together, it is evident from these provisions that use of the public lands for grazing is not necessarily consistent with the other dictates of FLPMA. FLPMA makes explicit that protection of the natural environment is of the utmost importance:

\begin{quote}
Congress declares that it is the policy of the United States that the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat
\end{quote}

\textsuperscript{54} See Debra L. Donahue, \textit{Trampling the Public Trust}, 37 B.C. ENVTL. AFF. L. REV. 257, 264–67 (2010) (analyzing case studies where reducing the number of grazing animals on public lands lessened environmental damage).

\textsuperscript{55} See Feller, \textit{supra} note 3, at 1128.

for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.\textsuperscript{57}

While this policy statement does refer to providing habitat for domestic animals, it does not reference grazing specifically, and to the extent that grazing is considered, it is only one of many important uses of the land. This understanding is strengthened by other provisions of the law.

FLPMA requires that BLM develop land use plans for the various lands it manages.\textsuperscript{58} Any decisions regarding these lands must fit within the land use plan for the area, and must be made according to the principles of “multiple use” and “sustained yield.”\textsuperscript{59} Multiple use means that all possible uses of the land must be considered. FLPMA defines multiple use as the:

\begin{quote}
[M]anagement of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and non-renewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.\textsuperscript{60}
\end{quote}

This requirement builds upon the TGA’s requirement that grazing take place only on lands chiefly valuable for grazing. Using lands for grazing

\textsuperscript{57} Id. § 1701(a)(8).
\textsuperscript{58} Id. § 1732(a).
\textsuperscript{59} Id. § 1732(a).
\textsuperscript{60} Id. § 1702(c) (emphasis added).
often means that their ability to support other uses is significantly deteriorated if not eliminated entirely. This fact provides added authority for the idea that grazing is not compatible with a multiple use requirement. While using lands for grazing generally only allows for that single use, removing grazing from public lands would allow for multiple uses such as recreation, timber, watershed, and wildlife, all of which would be more in keeping with the intent of the statute.

Sustained yield means “the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use.” This requires that the land be used in a way that will ensure its continuing viability for future generations. The Supreme Court has described the obligation as a requirement to “control depleting uses over time, so as to ensure a high level of valuable uses in the future.”

Moreover, FLPMA requires that, in “managing the public lands the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands.” Two of the requirements in developing land use plans are that BLM “give priority to the designation and protection of areas of critical environmental concern” and “weigh long-term benefits to the public against short-term benefits.” The law also contemplates the total elimination of certain uses of the lands.

Only a small portion of FLPMA deals with grazing specifically. The rangeland provisions of FLPMA apply to grazing on Forest Service lands as well as BLM lands. FLPMA, like the TGA, requires the Secretary to assess the lands and make a determination of their suitability for grazing. The law then makes provisions for grazing fees “which [are] equitable to the United States and to the holders of grazing permits and leases on such lands.”

61. See DONAHUE, supra note 40, at 114–59 (discussing the adverse effects of grazing on the ecological landscape).
62. Id.
65. 43 U.S.C. § 1732(b).
66. Id. § 1712(b)(3).
67. Id. § 1712(b)(7).
68. Id. §§ 1712 (e)(1)–(e)(2).
69. Id. § 1751(a).
Secretary retains broad authority to remove lands from grazing, and to put them to other uses and to cancel grazing permits.\textsuperscript{70} Taken together, these provisions make clear that BLM must manage the rangeland in a way that allows for multiple uses, does not unnecessarily degrade the lands, and preserves the use of the land for future generations. Grazing does not comply with these important and overarching provisions.

\textit{C. Public Rangelands Improvement Act}

Shortly after passing FLPMA, Congress passed the Public Rangelands Improvement Act (PRIA) in 1978 as a further attempt to improve the health of the range. PRIA was passed because Congress found that, despite previous efforts, “vast segments of the public rangelands are producing less than their potential . . . and . . . are in unsatisfactory condition.”\textsuperscript{71} PRIA provides added support for the proposition that grazing cannot be the only use of the public lands by requiring the lands to be managed, maintained, and improved for increased productivity “for all rangeland values.”\textsuperscript{72} PRIA further expands on the power of the Secretary of the Interior to withdraw lands from grazing by providing that it is within the power of the Secretary to determine that “grazing uses should be discontinued (either temporarily or permanently) on certain lands . . . in accordance with . . . the land use planning process required” by FLPMA, or as otherwise determined by the Secretary.\textsuperscript{73}

In addition, PRIA builds upon the system for collecting grazing fees for the use of the public lands. PRIA requires that “the Secretaries of Agriculture and the Interior shall charge the fee for domestic livestock grazing on the public rangelands which Congress finds represents the economic value of the use of the land to the user.”\textsuperscript{74} The law then establishes a process for determining the fair market value of land permits.

\textsuperscript{70} See 43 U.S.C. § 1752(a), (b), (f) (1976). FLPMA does contain a provision requiring that any “management decision or action pursuant to a management decision that excludes (that is, totally eliminates) one or more of the principal or major uses for two or more years with respect to a tract of land of one hundred thousand acres or more shall be reported by the Secretary to the House of Representatives and the Senate” and allows Congress to disapprove of such a decision. 43 U.S.C. § 1712(e)(2). While this may put some limits on BLM’s ability to eliminate grazing on large tracts of land on which grazing is a major use, there are no similar restrictions for smaller tracts of land.


\textsuperscript{72} Id. § 1901(b)(2).

\textsuperscript{73} Id. § 1903(b).

\textsuperscript{74} Id. § 1905.
Despite this requirement, BLM has never received fair market value for permits granting the right to graze on public lands. Rather, BLM has subsidized the use of the lands for this purpose, contributing to the detrimental environmental impacts.

Finally, in its findings and declaration of policy for PRIA, Congress points to a long list of environmental and economic impacts that result from using public lands for grazing. Among those impacts, Congress expressed its concern that “unsatisfactory conditions on public rangelands . . . may ultimately lead to unpredictable and undesirable long-term local and regional climatic and economic changes.”75 By specifically mentioning the climatic issues created by non-sustainable uses of the land, Congress expressed its desire for BLM to act to address these issues. Since that time, the need to respond to the pressing climatic changes has become even more urgent, and our knowledge about the contribution of animal agriculture to these changes has become much greater. While the substantive law of PRIA does not add much to the previously existing law, it provides additional ammunition for the argument that continuing to use the public lands for grazing is not consistent with congressional policy or public interest.

Taken together, these statutes express Congress’ strong preference to limit grazing on public lands and to address the environmental imperatives of managing these lands. While Congress undoubtedly passed these laws expecting grazing to continue, it provided BLM with significant discretion to end this practice if the environmental damage failed to be addressed and the lands could be put to better use. Nevertheless, BLM has been reluctant to use its power to take a strong environmental stand in regards to grazing. The powerful interests that want grazing on public lands to continue have limited BLM’s ability to act. For the most part, grazing on public lands has continued even though it is incompatible with other uses, contributes to severe degradation of the lands, and limits sustained yield of the lands going forward. Even when grazing clearly conflicts with the mandates of land use plans, BLM is reluctant to significantly reduce or eliminate it.

75.  Id. § 1901(a)(3).
Prior to the mid-1990s, BLM acted on the assumption that its decisions regarding grazing need not comply with federal environmental law. While numerous other uses of the federal lands were significantly impacted by environmental laws and, as noted above, Congress made clear that environmental degradation was a significant priority in passing laws to regulate the rangelands, BLM continued to issue grazing permits without considering their environmental impact. And, as a general rule, courts allowed this practice to continue. Moreover, FLPMA’s multiple use mandate was considered meaningless by many. As a result, “BLM managers and rancher-permittees [had] come to assume that livestock grazing on public lands [might] continue indefinitely without environmental compliance.” However, in the 1990s, BLM began to take its authority to protect the environment more seriously. At the same time, courts began to enforce BLM obligations to make decisions regarding grazing permits that took into account the environmental impacts and were consistent with land use plans.

The cases analyzed below look at how courts have dealt with BLM management decisions regarding the lands under its control and what its obligation and authority are to protect the environment under FLPMA, the TGA, PRIA, and other laws that govern agency action. The first section below looks at court decisions recognizing BLM’s authority to comply with the multiple use mandate of FLPMA and otherwise manage the rangeland as it sees fit. The second part summarizes court decisions recognizing limitations on BLM’s discretion and holdings that BLM has failed to make grazing decisions that adequately enforce the underlying statutes.

76. See Feller, supra note 9, at 36 (explaining that BLM has never explicitly asserted that grazing on the lands it manages is exempt from environmental laws, but that, prior to the 1990’s, BLM acted on the implicit assumption that grazing may continue without compliance with such laws).
77. Id.
78. Id. at 27–28.
79. See id. at 48 (explaining the argument of some legal commentators that the statutory language is too vague to be enforceable).
80. Id. at 28.
A. It’s Up to the Agency: BLM Authority to Use Public Lands as it Sees Fit, Including to Protect the Range from Grazing

One of the most significant modern-day cases dealing with BLM’s ability to protect public lands from the damage caused by grazing is Public Lands Council v. Babbitt. The Tenth Circuit, and subsequently the Supreme Court, dealt with BLM’s authority under the TGA, FLPMA, and PRIA to issue regulations that aimed in part to protect the environment and called into question the long-standing privileges of grazing permit holders. Ranchers challenged portions of 1995 regulations issued by the Secretary of the Interior as violating the underlying laws.\(^\text{81}\) One of the primary challenges involved the Secretary’s decision to redefine grazing preferences under the TGA. A portion of the TGA states: “So far as consistent with the purposes and provisions of this chapter, grazing privileges recognized and acknowledged shall be adequately safeguarded.”\(^\text{82}\) Ranchers had long taken the position that this language required their use of the land for grazing to be given preference over other possible uses of the land.\(^\text{83}\) The Department of the Interior took the position that ranchers with existing permits would be given priority over other entities wishing to use the land to graze; however, they would not be given preference over other potential uses.\(^\text{84}\) Existing permit holders were concerned that their permits might not be renewed if grazing were not given priority over other uses.

In upholding most parts of the regulation, the Tenth Circuit noted that one of the purposes of FLPMA was to require that grazing permits conform to land use plans. The court went on to identify the purposes of the TGA as: “regulat[ing] the occupancy and use of the federal lands, . . . preserv[ing] the land and its resources from injury due to overgrazing, and . . . provid[ing] for the orderly use, improvement, and development of the range.”\(^\text{85}\) The court rejected arguments made by the plaintiff, Public Lands Council, finding that the privileges provided under a grazing permit entail nothing more than the authorization to graze for a specific period of time and a priority of renewal over other permit applicants.\(^\text{86}\) The court also rejected the argument that this interpretation threatened the goal of

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83. Babbit, 167 F.3d at 1293.
84. Id. at 1294.
85. Id. at 1290.
86. Id. at 1298.
“stabilizing the livestock industry,” stating, “The Act clearly states that the need for stability must be balanced against the need to protect the rangeland.”87 The court further pointed out that “the Act treats stabilizing the livestock industry as a secondary goal. . . . [T]he actual text of the statute references only safeguarding the rangeland and providing for its orderly use as primary objectives.”88 The court added that “such privileges will be adequately safeguarded as long as they are consistent with the purposes and provisions of the TGA.”89

The court went on to find that reading the TGA in concert with FLPMA further strengthened the argument that protecting the lands is the primary obligation of BLM and that the lands must be managed “for many purposes in addition to grazing and for many members of the public in addition to the livestock industry.”90 The court also upheld regulations maintaining United States ownership of range improvements91 and removing a requirement that applicants for grazing permits be “engaged in the livestock business.”92 As explained in further detail below, the court agreed with Public Lands Council that BLM was not permitted to issue grazing permits solely for the purpose of conservation.93

On appeal, the Supreme Court unanimously affirmed the Tenth Circuit’s decision.94 The Court reiterated BLM’s significant authority to decide how to manage the public lands and to ensure that the rangelands are protected for future generations. The Court pointed out that “FLPMA strengthened the Department’s existing authority to remove or add land from grazing use, . . . while specifying that existing grazing permit holders would retain a ‘first priority’ for renewal so long as the land use plan continued to make land ‘available for domestic grazing.’”95 The Court noted that, even prior to the 1995 regulations, “the Secretary has always had the statutory authority under the Taylor Act and later FLPMA to reclassify and withdraw range land from grazing use.”96 The Court went on to hold

87. Id.
88. Id. at 1299, n. 5.
89. Id. at 1299.
90. Id. at 1300.
91. Id. at 1305.
92. Id.
93. Id. at 1308.
95. Id. at 738.
96. Id. at 742.
that it was in the Secretary’s discretion to determine how to “safeguard” grazing privileges in terms of the entire purpose of the TGA.\textsuperscript{97}

\textit{Babbitt} made explicit the idea that grazing can take place only if it fits within BLM’s land use plan for the area in question. Both of these opinions make clear that grazing is not the principal purpose of any of the three statutes. While each of these decisions assumes that grazing will continue and leaves open the question of challenging the regulations as applied, given the ever-increasing damage to the environment, both of these decisions provide an opportunity for BLM to show adequate reason to end grazing on public lands and still comply with the underlying laws. Courts have also upheld Forest Service decisions to remove land from grazing in order to protect the environment under similar requirements of the National Forest Management Act.\textsuperscript{98}

Other cases, while rejecting claims from environmental plaintiffs and upholding BLM decisions, have not foreclosed the possibility that BLM could act differently, limit grazing, or otherwise act in ways that are more protective of the environment. One of the most significant Supreme Court cases dealing with BLM decisions not to act to protect the environment was \textit{Norton v. Southern Utah Wilderness Area}.\textsuperscript{99} In \textit{Norton}, environmental plaintiffs challenged BLM’s failure to limit off-road vehicle use in potential wilderness areas in Utah as violating the National Environmental Policy Act (NEPA) and BLM’s land use plan under FLPMA. In rejecting the challenge, the Court stated, “The principal purpose of the \textit{[Administrative Procedure Act] limitations} . . . is to protect agencies from undue judicial interference with their lawful discretion, and to avoid judicial entanglement in abstract policy disagreements which courts lack both expertise and information to resolve.”\textsuperscript{100}

Similarly, lower courts have deferred to BLM decisions allowing grazing to continue.\textsuperscript{101} In rejecting a challenge by environmental plaintiffs,
one court stated, “Although I might privately agree with plaintiffs that a more aggressive approach to range management would be environmentally preferable, or might even be closer to what Congress had in mind, . . . ‘courts are not at liberty to break the tie choosing one theory of range management as superior to another.’”102 Courts have given the Forest Service similar discretion to make land management decisions involving grazing.103

Each of these cases makes clear that BLM has substantial authority to make the choices it feels are best in its land planning decisions. While BLM has often been reluctant to exercise this authority to limit grazing, that does not mean that the authority does not exist. Nothing in these opinions, however, requires BLM to take any particular action, including ending or significantly limiting grazing on public lands. The next section examines situations in which courts have held that BLM has failed to adequately take environmental considerations into account in making grazing decisions.

B. Limits on Agency Discretion: BLM’s Obligations to Act to Protect the Public Lands from Grazing

As noted above, until relatively recently, BLM generally did not account for environmental consequences when making grazing permit decisions, and courts did not require it to do so. One notable exception was Natural Resources Defense Council, Inc. v. Morton. In 1974, the U.S. District Court for the District of Columbia found that BLM had failed to adequately take into account the environmental impacts of grazing and that BLM was required to comply with NEPA in making grazing decisions.104

BLM has significant discretion in taking steps to prevent unnecessary or undue degradation of public lands); Sierra Club v. Clark, 756 F.2d 686 (9th Cir. 1985). 102. Hodel, 624 F. Supp at 1058. 103. See Forest Guardians v. U.S. Forest Service, 329 F.3d 1089, 1099–1100 (9th Cir. 2003). 104. Natural Res. Def. Council, Inc. v. Morton, 388 F. Supp. 829 (D.D.C. 1974), aff’d without opinion, 527 F.2d 1386 (D.C. Cir. 1976); cert. denied, 427 U.S. 913 (1976). Many cases address BLM’s alleged failure to comply with NEPA. National Environmental Policy Act of 1969 42 U.S.C. § 4321(1970). NEPA is a procedural, not a substantive, statute. It requires federal agencies to comply with a number of requirements to consider the environmental impact of their proposed activities. It does not require federal agencies to take any given action. Nevertheless, challenges brought under NEPA require federal agencies to take a closer look at their activities, and they give courts an opportunity to explain the steps that they believe are adequate for agencies to take to protect the environment. Therefore, while NEPA itself does not provide BLM with authority to end grazing on public lands, analyses under NEPA are useful to look at steps that BLM could and should be taking to protect the environment.
Unfortunately, much of the promise of *Morton* was hindered by the “Sagebrush Rebellion” (discussed below) and backlash from ranchers and their supporters.

A minor but significant shift occurred in 1993 when an administrative law judge held that BLM had failed to comply with NEPA and with FLPMA’s multiple use requirement in renewing grazing permits in the Comb Wash area of Utah and enjoined renewal of the permits. In 1997, the Interior Board of Land Appeals (IBLA) upheld that decision. The IBLA stated that, while “FLPMA does not require a ‘specific’ public interest determination for grazing . . . FLPMA’s multiple-use mandate requires that BLM balance competing resource values to ensure that public lands are managed in the manner ‘that will best meet the present and future needs of the American people.’”105 Although some previous cases recognized BLM’s authority and obligation to protect the environment, this case took seriously FLPMA’s multiple-use mandate and BLM’s obligation to consider the impacts of grazing in land use plans. Since that time, while imposing environmental limitations on BLM and on ranchers remains highly inadequate, courts have been more willing to require BLM to comply with environmental laws in making grazing permit decisions.106

In 2010, the Ninth Circuit addressed the issue of whether BLM had adequately considered the possibility of other uses in developing a land use plan that allowed for significant portions of land in southeastern Oregon to be used for grazing and off-road vehicles.107 The court found that BLM had


106. This advance has been limited by Congress, however. Since 1998, because of the bureaucratic difficulties in conducting Environmental Assessments and Environmental Impact Statements under NEPA, Congress has attached riders to the Department of the Interior budget appropriations, which allow BLM to renew grazing permits without complying with NEPA. See Consolidated Appropriations Act, Pub. L. No. 112-74, 125 Stat. 786 (2011); Dep’t of the Interior Act, Pub. L. No. 108-108, § 325, 117 Stat. 1241, 1308 (2003). While this issue has made it more difficult to bring cases under NEPA, see Great Old Broads for Wilderness v. Kemphorne, 452 F. Supp. 2d 71, 75–76 (D.D.C. 2006) (explaining that BLM was burdened by an unusually large number of permit renewal, and because Congress was unwilling to impose the costs of BLM’s backlog on the region’s ranchers, it issued a series of appropriation riders that provided for the renewal of all expiring permits pending the completion of requisite review procedures); W. Watersheds Project v. BLM, 629 F. Supp. 2d 951, 957 (D. Ariz. 2009), and indicates the powerful interests that make reform difficult, BLM is still required to engage in the necessary environmental review when possible. In addition, other decisions made by BLM and occasions when BLM has made an effort to comply with NEPA are still challengeable. Moreover, the Supreme Court has held that Congress’ action in an appropriation bill is not an indication of its attempt to amend a conflicting statute. See Tenn. Valley Auth. v. Hill, 437 U.S. 153, 190 (1978) (explaining that the Appropriations Committees had no jurisdiction over the subject of endangered species and that the appropriation measures are “Acts of Congress” with limited and specific purposes).

107. Or. Natural Desert Ass’n v. Bureau of Land Mgmt., 625 F.3d 1092 (9th Cir. 2010).
violated NEPA by failing to adequately consider the potential wilderness use of the land in question.\textsuperscript{108} Even though the court addressed off road vehicle use and did not directly address the issue of alternatives to grazing, the court did state that “BLM must consider closures of significant portions of the land it manages, including, if found appropriate on remand, lands with wilderness characteristics.”\textsuperscript{109}

Similarly, lower courts have enjoined BLM grazing decisions that did not adequately take into account the environmental impacts.\textsuperscript{110} In Western Watersheds Project v. Bennett, the court found that BLM had violated its duties under NEPA and FLPMA by renewing grazing permits despite substantial evidence that the range conditions were continuing to deteriorate and that issuing these permits was contrary to BLM’s land use plan for the area.\textsuperscript{111} The court enjoined further grazing on twenty-eight parcels on which ranchers had applied for renewals of their permits.\textsuperscript{112} The reasoning in this case has been followed by other courts who have agreed that federal agencies have failed to take sufficient account of the environmental impacts of grazing. In February 2012, a federal judge in Idaho considered whether BLM’s decision to renew grazing permits violated NEPA and FLPMA despite the agency’s own recognition of the detrimental environmental impact that grazing was having.\textsuperscript{113} The court pointed out that the decision to reissue the grazing permits was not consistent with the land use plan and, therefore, violated FLPMA.\textsuperscript{114} In 2011, a court held that BLM had failed to comply with the requirements under NEPA, in part by not considering ending grazing on the land in question:

BLM’s purported "No Action" Alternative involves grazing; that alternative required agency action through issuing new ten-year grazing permits. If BLM truly did take no action, then the old grazing permits would expire, no new permits would issue, and no range improvements would occur. No action would be no action.

\textsuperscript{108} Id. at 1124.  
\textsuperscript{109} Id.; Or. Natural Desert Ass’n v. Bureau of Land Mgmt., 531 F.3d 1114, 1145 (9th Cir. 2008).  
\textsuperscript{112} Id. at 1229.  
\textsuperscript{113} Western Watersheds Project v. Salazar, 843 F. Supp. 2d 1105, 1109 (D. Idaho 2012).  
\textsuperscript{114} Id.
This is a reasonable, and obvious, alternative to issuing new grazing permits. BLM, however, dismissed a real no action alternative out of hand based on a mistaken understanding of its authority.  

While the court allowed the permits to continue temporarily based on the permittees’ detrimental reliance, it instructed BLM to consider all alternatives, including no grazing. Similarly, courts have enjoined grazing on Forest Service lands when the Forest Service has failed to comply with environmental mandates.  

At the same time, courts have been unwilling to recognize BLM authority to issue regulations that do not adequately protect the environment. In 1984, the National Resources Defense Council and other environmental organizations challenged regulations promulgated by the Reagan Administration that would have limited BLM control over lands leased for grazing and would have limited the environmental protection obligations of the agency. In particular, the plaintiffs objected to provisions in the new rule that provided for “Cooperative Management Agreements,” which would have allowed “selected ranchers to graze livestock on the public lands in the manner that those ranchers deem appropriate.” The court struck the regulations down as “contrary to Congressional intent and . . . enacted without proper regard for the possible environmental consequences which may result from overgrazing on the public lands.”  

More recently, in 2011, the Ninth Circuit refused to uphold regulations that would have significantly undercut the protections put in place by the 1995 regulations discussed above. The 2006 regulations were challenged as contrary to the TGA, FLPMA, and other federal law because they would have limited public participation in rangeland management decisions;
limited BLM’s environmental enforcement powers; and given the holders of grazing leases greater ownership rights to improvements on public grazing lands.\textsuperscript{121} The court found that the regulations were “arbitrary and capricious” and not in keeping with the underlying law: BLM had downplayed the environmental impacts of the regulations in the Environmental Impact Statement prepared under NEPA.\textsuperscript{122} The court stated that BLM’s decision to limit its role and the public’s role in overseeing range management was “inconsistent with the 1995 Regulations and discordant with the lessons learned from the history of rangeland management in the west, which has been moving towards multiple use management and increased public participation.”\textsuperscript{123} The court also found that the regulations violated provisions of the Endangered Species Act. While the court did not reach the challenge under FLPMA, the decision makes clear that BLM has significant authority to protect the environment but less authority to fail to protect the environment. In discussing the history of the case, the court noted that the TGA’s purpose was to “stop injury to the public grazing lands” and “promote the highest use of the public lands.”\textsuperscript{124} The court further noted that subsequent laws and regulations have further strengthened these priorities. The Supreme Court declined to review the decision.\textsuperscript{125}

These cases make clear that BLM has an obligation, not just the authority, to restrict grazing when continuing this use conflicts with other uses of the land and leads to continuing degradation of the range. These cases also make clear that land planning, not grazing, is BLM’s statutory mandate under FLPMA and other federal laws. If grazing does not fit within a land use plan, then it cannot be allowed to continue. As land use plans have grown more protective of the environment, grazing has a lower and lower priority as compared to other uses.

IV. BUILDING ON EXISTING LAW: REQUIREMENTS TO ADDRESS GLOBAL CLIMATE CHANGE IN MAKING LAND USE DECISIONS

The cases and regulations detailed above deal with traditional arguments about the damage grazing caused to the range. But, as noted in

\textsuperscript{121} Id. at 479.
\textsuperscript{122} Id. at 492–93.
\textsuperscript{123} Id. at 494.
\textsuperscript{124} Id. at 478.
detail in Part I of this article, grazing contributes to other pressing global issues, particularly global climate change. This is an issue that obviously cannot be addressed by ending grazing on public lands alone. Despite the vast amount of land that is used for grazing of animals, the number of animals raised for food on public lands is relatively insignificant. Of the more than 35,000,000 cows killed each year for food in the United States, only as many as eight percent are raised on public lands. Ending grazing on public lands will not end the raising of animals for food, and animal agriculture is only one contributor to global climate change. Nevertheless, that does not mean that it is not a necessary and important step. The federal government should manage the lands in the public interest, using them in a way that is beneficial to society. At the very least, actions taken in our name should not be detrimental to our well-being.

The Supreme Court dealt with a similar issue in Massachusetts v. U.S. Environmental Protection Agency. The Environmental Protection Agency (EPA) had refused to regulate greenhouse gases released by cars under the Clean Air Act. Lacking the power to control global climate change on their own, the state of Massachusetts as well as other states, local governments, and environmental organizations filed a citizen petition urging EPA to act. In rejecting the citizen petition, EPA argued that it did not have the authority to regulate a naturally occurring gas under the Clean Air Act. It further argued that, even if it did have the power, it did not believe that regulating greenhouse emissions from vehicles was a wise policy decision. In addition, it argued that it was powerless to control global climate change, a worldwide phenomenon with many disparate and uncontrollable causes.

The Supreme Court found those arguments inadequate. The Court pointed to the dire effects of climate change including “a precipitate rise in

129. Id. at 504.
130. Id. at 511.
131. Id.
132. Id. at 513.
sea levels by the end of the century, severe and irreversible changes to natural ecosystems, a significant reduction in water storage... and an increase in the spread of disease.\textsuperscript{133} The Court rejected EPA’s argument that “curtailing motor-vehicle emissions would reflect ‘an inefficient, piecemeal approach to address the climate change issue.’”\textsuperscript{134} The Court held that, while it is certainly true that EPA is without power to end climate change or to address the innumerable causes of climate change taking place outside of United States borders on its own, EPA has a duty to implement the laws passed by Congress and to protect the citizens and inhabitants of the United States to the extent of its ability.\textsuperscript{135} The Court also rejected EPA’s argument that, because another federal agency was tasked with setting mileage standards, it was without power to address vehicle emissions.\textsuperscript{136}

In affirming EPA’s obligation to regulate global greenhouse gases, the Supreme Court pointed to ongoing attempts by Congress to address global climate change, including the National Climate Protection Act, the Global Climate Protection Act, and the ratification of the United Nations Framework Convention on Climate Change.\textsuperscript{137} The Court rejected arguments that these efforts evinced the totality of congressional action to address climate change. Rather, it looked to such efforts as evidence of Congress’ priority on this issue.

The Court also pointed out that, “reducing domestic automobile emissions is hardly a tentative step... [T]he United States transportation sector emits... more than six percent of worldwide carbon dioxide emissions.”\textsuperscript{138} The Court further noted that “[a] reduction in domestic emissions would slow the pace of global emissions increases, no matter what happens elsewhere.”\textsuperscript{139}

As noted previously, animal agriculture is a greater contributor to global climate change than transportation. While ending grazing on federal public lands is a small step, it is a crucial one and one that BLM must take to address this pressing environmental crisis. According to the Union of Concerned Scientists, addressing the climate change impact of raising cows for food “offers an opportunity to curb a small, but measurable, amount of

\begin{itemize}
  \item \textsuperscript{133} Id. at 521–22 (internal citations omitted).
  \item \textsuperscript{134} Id. at 533.
  \item \textsuperscript{135} Id. at 524.
  \item \textsuperscript{136} Id. at 532.
  \item \textsuperscript{137} Id. at 507–09.
  \item \textsuperscript{138} Id. at 522.
  \item \textsuperscript{139} Id. at 526.
\end{itemize}
And, as other experts have noted, “this approach would have far more rapid effects on [greenhouse gas] emissions and their atmospheric concentrations—and thus on the rate that the climate is warming—than actions to replace fossil fuels with renewable energy.”

BLM and other federal agencies operate under the same framework as EPA. The fact that the Department of the Interior is not the federal agency specifically tasked with addressing environmental degradation does not relieve it of responsibility to address global climate change when directly implicated by its land use decisions. This reality is all the more true given the environmental mandates in all of the statutes governing grazing on public lands. The statutes and regulations governing management of the range make clear that environmental protection is a priority, and numerous additional statutory provisions make clear that that includes global climate change. Continuing to use federal lands in a way that is detrimental to the environment and to public health violates those duties.

The power of the Court’s holding in Massachusetts v. EPA is buttressed by the fact that the Government Accountability Office (GAO) has concluded that federal agencies have the authority to alter their practices to respond to climate change. In a 2007 report, GAO concluded: “Because there is growing evidence that climate change is likely to have wide-ranging consequences for the nation’s land and water resources, elevating the importance of the issue in their respective strategies and plans would enable BLM [and the Forest Service] to provide effective long-term stewardship of the resources.”

In addition, BLM is bound by the Clean Air Act. One of the main purposes of the Clean Air Act is to “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of the population.” The Act requires the Administrator of the EPA to “cooperate with and encourage cooperative activities by all Federal departments and agencies having functions relating to the prevention and control of air pollution, so as to assure the utilization in the federal air pollution control program of all appropriate and available

140. Gurian-Sherman, supra note 14, at 5.
141. Goodland and Anhang, supra note 13, at 11.
facilities and resources within the Federal Government." Thus far, EPA regulation of animal agriculture under the Clean Air Act has been limited, and in its regulations carrying out the Supreme Court's dictates following Massachusetts v. EPA, it has exempted certain entities including animal agriculture. But that does not mean that it does not have the power. And opponents of such regulation seemingly concede that EPA has that authority. In June, a representative of the American Farm Bureau Federation argued that by identifying greenhouse gases as pollutants under the Clean Air Act, EPA is obligated at some point to require permits for most animal agriculture entities under current law. He further pointed out that the vast majority of animal agriculture operations, including seventy-two percent of entities raising cows for food, would be required to obtain permits (at significant expense) under the existing requirements. BLM has recognized its obligation to comply with the Clean Air Act and to protect air quality and climate, including under FLPMA's mandate to prevent "unnecessary or undue degradation of the lands." BLM's Air Resource Management Manual states, "incorporating climate information into the BLM's programs, projects, activities, and decisions . . . is critical for effective management and relevant environmental review." The manual goes on to identify BLM policy in regards to climate change: "BLM should consider climate and potential or documented climate change as part

144. Id. § 7402(b).
146. Wilson, supra note 18.
149. Id. at 5.
151. Id. § .01.
of its planning and decision making process."\textsuperscript{152} The manual then identifies a number of areas that the Bureau should evaluate covering, “how BLM management practices may or may not contribute to the potential effects of climate change, including but not limited to emissions, sequestration, or mitigation of greenhouse gases.”\textsuperscript{153}

In addition, the Department of the Interior has taken other steps that evince its responsibilities to address climate change. The Secretary has issued orders “requiring Interior bureaus to analyze climate change in plans and policies;” and requiring “coordination among federal agencies to promote . . . carbon capture and storage, and climate adaptation.”\textsuperscript{154} Moreover, Department regulations require BLM to assess the conditions of the rangeland and make changes in livestock management if grazing is a factor in creating poorly functioning conditions.\textsuperscript{155}

As noted above, the federal statutes governing grazing on public lands already provide BLM and the Forest Service with authority to restrict or end grazing on the lands. The vital need to address global climate change, and the authorities described in this section provide added weight to BLM’s ability to act and additional and important confirmation of BLM’s obligation to end grazing on public lands.

V. HOW DO WE GET FROM HERE TO THERE: ADDRESSING OBSTACLES TO REFORM

The above analysis provides significant basis and purpose for BLM to end grazing on public lands. The environmental impact of using public lands for grazing is severe, long-lasting, and has been recognized for more than a century. Animal agriculture’s considerable contribution to the global devastation caused by climate change makes that impact more profound. Congress has provided BLM with authority to address this serious issue on several occasions. Additionally, courts have recognized BLM’s authority and obligation to act. This paper builds on that of experts who have, for decades, pointed to BLM’s authority and obligation to end grazing on public lands:

\textsuperscript{152} Id. § .06C2.
\textsuperscript{153} Id.
\textsuperscript{154} Catlin, Carter, and Jones, supra note 24, at 209.
\textsuperscript{155} Id. at 210.
None of the aforementioned laws pose an obstacle to BLM taking the necessary steps to end grazing on public lands. This includes, where necessary, BLM removing livestock from the area to be protected. On the contrary, affirmative steps to conserve biodiversity would facilitate BLM compliance with several legislative mandates, including: managing the public lands for sustainable uses (FLPMA), avoiding unnecessary or undue degradation of public lands (FLPMA), conserving threatened and endangered species (ESA), and restoring the biological integrity of surface waters (CWA). A biodiversity conservation strategy calling for reduction or elimination of livestock grazing on arid BLM lands would enhance BLM’s ability to comply with the letter and spirit of the CWA, state water quality law, NEPA, ESA, and FLPMA.156

Nevertheless, the chance of ending grazing on public lands remains at most a remote possibility. Despite the legal authority and the perils of failing to act, powerful interests prevent reform from taking place. The final section of this paper addresses three obstacles to reform: ranchers and the position they hold in the American mystique, concerns about the economic impact of ending grazing on public lands, and conflicting theories about the limits of BLM authority.

A. Changes to a Way of Life (Who’s Really in Charge?)

For the most part, the desire to maintain grazing on public lands arises from a romanticization of a way of life that Americans see as central to our view of ourselves as a country. The idea of cowboys on the range is a key part of that vision. However, to the extent that that way of life ever existed, it is a thing of the past. The majority of ranches are not run by families or individuals; they are run either by large corporations157 or by wealthy hobbyists who do not need or want to make a living from ranching.158

Debra L. Donahue has explained in detail the way in which grazing on

156. DONAHUE, supra note 41, at 227–28.
158. See Tanaka et al., supra note 157; Feller, supra note 3, at 1127.
public lands continues despite the small numbers of ranchers, low economic impact, and detrimental environmental consequences. Donahue details how the animal agriculture industry has “captured” the management of the public lands through establishing property rights in the resource, controlling the agencies that are supposed to regulate the industry, and capturing American life and culture through the cowboy myth. She argues that the way the “range livestock industry has exploited the capture metaphor is unequalled and that, unless checked, it is likely to be disastrous for public lands.”

This is a way of life that many in the west and their advocates are willing to protect at nearly any cost. The so-called Sagebrush Rebellion in the 1970s, in which several western state legislatures—responding to federal law and successful court cases—passed bills purportedly taking state ownership of BLM lands, exemplified this fact. The Sagebrush Rebellion culminated in the election of Ronald Reagan, who brought its theories and individuals with him to Washington. While the “rebels” did not succeed in transferring significant portions of BLM lands to state or private ownership, they did succeed in significantly weakening BLM and Forest Service management of the range. That mindset continues to exist within ranchers and representatives of western states. And some are willing to engage in or threaten violence to maintain this way of life.

This reality represents the greatest obstacle to reforming public rangeland policy and ending grazing on public lands. However, as explained in detail above, this obstacle is not a legal obstacle. Federal courts have refused to recognize a right in the public lands that states and ranchers have demanded. Similarly, there is no legal requirement for grazing to retain its special status under existing law. Rather, the reverse is true: BLM’s obligations do not change despite the considerable political pressure to maintain the status quo.

159. Donahue, supra note 52, at 803–04.
160. Id.
161. Id. at 723.
162. See Jacobs, supra note 157, at 456–57 (providing a description of the Sagebrush Rebellion).
163. Id.
164. Id.
B. Purported Economic Impacts of Ending Grazing

Often, concerns about ending grazing on public lands stem from the economic impact this decision would have on local communities. As Debra L. Donahue has pointed out, and as fully documented above, the relevant agencies have not:

[R]easonably justified livestock grazing under the planning or management criteria of their principal land management statutes. . . . Instead, grazing is rationalized as a means of sustaining small communities, maintaining open spaces on private lands, and preserving an important western way of life and culture. The governing statutes, however, confer on BLM and Forest Service no authority, much less a mandate, to promote local economic or lifestyle concerns or to regulate development on private lands.166

In National Resources Defense Council v. Hodel, the court seemed to confirm that ending grazing on public lands was not a viable economic alternative. The court stated:

[T]he complete abandonment of grazing in the Reno planning area is practically unthinkable as a policy choice; it would involve monetary losses to the ranching community alone of nearly 4 million dollars and 290 jobs, not to mention unquantifiable social impacts. Of course, compared with the economy of the Reno area as a whole, ranching plays only a negligible role. Nevertheless, eliminating all grazing would have extreme impacts on this small community. A ‘no grazing’ policy is simply not a ‘reasonable alternative’ for this particular area.167

As noted previously, BLM has acted under an assumption that it does not have the authority to seriously consider ending grazing on public

166. Donahue, supra note 52, at 729 (internal citations omitted).
167. Hodel, 624 F. Supp. at 1054 (internal citations omitted).
lands. However, even taking the economic impact into account, grazing on public lands cannot be justified:

Federal grazing fee revenues . . . are swamped by the costs of administering the range program. Average returns to ranchers range from negative to two to four percent. Only two percent of U.S. beef cattle production is attributable to public lands, an amount easily replaceable by other regions and private-land operators. Similarly, the 18,000 low-wage jobs directly related to federal land grazing could be replaced in a matter of days by normal job and income growth in the national economy. . . . [F]ew if any western communities are dependent economically on public-land grazing. On the contrary, the services and employment opportunities afforded by small towns help sustain public land ranchers.

A 1994 Department of the Interior Draft Environmental Impact Statement, issued in regards to the regulations discussed in Part III. A. above, estimated that stopping all grazing on federal lands would only result in job losses of 18,300 and would negligibly affect the cost of cow flesh.

As noted above, the laws governing grazing on public lands all call for grazing fees to be paid by permittees. However, the grazing fees have never been high enough to achieve their objective of helping to provide better care of the lands. The grazing fee has seldom been raised since PRIA was enacted. In 1986, President Reagan issued an executive order setting the fee at no less than $1.35 per animal unit month (AUM, the amount of forage needed by one cow for one month). That amount, substantially less than the fair market value in 1986, has remained relatively constant for

168. See, e.g., W. Watersheds Project v. Salazar, 2009 U.S. Dist. LEXIS 39364 (D. Idaho 2009) (noting that BLM has concluded that it has no legal authority to consider a “no grazing” alternative); Rosenkrance, 2011 U.S. Dist. LEXIS 1288 (describing BLM’s “No Action Alternative” and the agency’s subsequent rejection of said alternative).
169. Donahue, supra note 52 at 728-730.
the last twenty-five years.\textsuperscript{173} In 1980, BLM charged $2.36 and the Forest Service $2.41 per AUM.\textsuperscript{174} That amount was gradually reduced until it fell to $1.35 in 1985.\textsuperscript{175} The rate has been raised on several occasions since that time, but has not risen above $2 since 1981.\textsuperscript{176} Most years, it has remained at $1.35,\textsuperscript{177} and that is where the rate currently sits.\textsuperscript{178}

As a result, entities who use public lands for grazing receive a substantial government subsidy. GAO has estimated that taxpayers pay approximately $144 million per year managing federal lands for grazing.\textsuperscript{179} Only $21 million is recouped in grazing fees.\textsuperscript{180} The government would need to charge at least $7.64 per AUM for grazing on BLM lands and $12.26 for grazing on Forest Service lands just to recoup the investment made.\textsuperscript{181} States and private entities charge significantly more for use of their lands for grazing.\textsuperscript{182}

Clearly, using public lands for grazing—in addition to having detrimental environmental effects—is not the best economic use of the lands:

In 1991, public land grazing fees for the entire U.S. raised just under 30 million dollars. The beneficiaries of this government bonanza are a relative handful of elite range ranchers. Research by Fortune magazine reveals that the nation’s 28,700 livestock permits are controlled by only 2.5 percent of all American ranchers, and half of the permits go to just a quarter of a percent of all ranchers. These permit holders pay one-quarter the price that they would pay for comparable leases on private land.\textsuperscript{183}
However, simply looking at what ranchers would be paying under a fair market system is not a realistic analysis of the economic impact of ending grazing. Even if the rates were raised to the amount necessary to manage the lands, the environmental and public health impacts of this use of the land would not be taken into account. As a result, the economic vitality of continuing to engage in this industry is propped up. Requiring ranchers to pay the true value of grazing on public lands would change the calculus for them and for courts assessing the economic considerations of continuing to use the lands in this fashion. There are many more economic benefits to ending grazing on public lands, both to the United States and to local communities, than to continuing it. And, regardless of the economic impact, there is nothing in FLPMA or other federal laws that requires the economic impact on the rancher or the surrounding community to be a consideration in issuing grazing permits.

C. Limitations on BLM’s Authority to Protect the Range?

As noted above, many courts have found that BLM has acted outside of its authority in failing to protect the environment. Few courts have held that BLM exceeded its authority in making decisions to protect the environment. Moreover, cases in which courts, including the Supreme Court, have held that BLM need not act to protect the environment, do not preclude it from doing so. Courts have long held that, while the land management decisions of BLM may be questionable, making decisions about grazing remains in the Secretary’s discretion.

One case in which a court held that BLM had exceeded its authority under the TGA is the Tenth Circuit’s decision, discussed previously, in Public Lands Council v. Babbitt. The court held that BLM did not have the authority to issue grazing permits for the purpose of conservation. The regulations would have allowed BLM to issue permits for a use that specifically excluded livestock grazing.184 The purported authority for this provision was section three of the TGA, which allows the Secretary to “issue permits to graze livestock” on public lands.185 The court found that the intent of Congress on this point was unambiguous and that there was no room for the agency to interpret it differently: “[L]and that [the Secretary] has designated as ‘chiefly valuable for grazing livestock’ will be completely

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184. Babbit, 167 F.3d at 1307.
185. Id.
excluded from grazing use.” However, this holding says nothing about BLM’s authority to remove land from grazing entirely, an authority, which—as fully documented above—it clearly has. The court went on to state that “the Secretary [has] very broad authority to manage the public lands, including the authority to ensure that range resources are preserved. Permissible ends such as conservation, however, do not justify unauthorized means.”

As noted above, BLM has taken the position that it cannot end grazing on public lands. But the limits on BLM’s authority are largely self-imposed. BLM decisions are entitled to substantial discretion and should be upheld unless they are “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law” or unless they are contrary to the unambiguous intent of Congress. The underlying statutes provide BLM with significant discretion to act as it sees fit; the language of FLPMA “breathes discretion at every pore.” Other commentators have noted that:

Conservation-oriented actions, such as the designation and management of areas of critical environmental concern, and management for scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values, are authorized in broad but definitive strokes. Conversely, resource exploitative actions such as grazing are authorized in more narrow strokes due to functional limitations imposed by FLPMA’s mandate to not permanently impair the productivity of the land and quality of the environment or cause unnecessary or undue degradation.

Each of the authorities explored above gives BLM responsibility for protecting the environment as a primary objective. A decision to end grazing on public lands is clearly beyond the power that BLM considers it has or the power thus far recognized by the federal courts. Nevertheless, protecting the environment and public health for future generations is a

186. Id. at 1308.
187. Id.
190. Hodel, 624 F. Supp. at 1058; see also Perkins, 608 F.2d at 806 (interpreting similar language in the law governing the Forest Service).
191. Schlenker-Goodrich, supra note 8, at 166.
fundamental objective of Congress and of the agencies carrying out its objectives. The statutes providing authority to BLM and the Forest Service, other federal laws requiring protection of the environment, and the cases interpreting these laws and authorities all provide ample support for significantly reducing or ending grazing on public lands. BLM has the authority to act to truly protect the rangelands from the long-term damages of overgrazing. It simply has to do so.

CONCLUSION

Congress has long recognized the detrimental effects that grazing has on the public lands. For this reason and others, Congress has given BLM, the Forest Service, and other public agencies ample authority to make decisions that are protective of the environment. Those agencies, however, have not always been willing to take this authority and use it to improve environmental conditions. However, the issues facing the world are growing and serious. Congress is not always able to act quickly and effectively to address some of the major issues of our time. Administrative agencies, however, are better able to act quickly and should take the authority given to them to take actions in the public interest and in the interests of the natural environment and humanity.

While ending grazing is not a sufficient step to address these serious and intractable problems, it is a necessary and a significant step. At the very least, the federal government should not be using its lands and subsidizing activities so harmful to the earth and all its inhabitants. The statutes and regulations governing the use of public lands for grazing allow—and arguably compel—the end of the use of lands for this purpose. The environmental crisis facing the U.S. and the world necessitates that federal agencies take all available steps to mediate the impacts of global climate change and to use their resources in a way that is not detrimental to the natural environment and human health. Use of public lands for grazing undermines both of these considerations. Eliminating grazing on public lands will allow the lands to begin to recover. This will address many of the negative environmental effects of overgrazing and poor range management. At the same time, it will eliminate a significant cause of global climate change from the public lands, and allow the rangeland to ameliorate the impacts of climate change through sequestration of carbon. These are all goals that are in the public interest of the country going forward. It is time for BLM to act.
HYDRAULIC FRACTURING REGULATION IN THE UNITED STATES: THE LAISSEZ-FAIRE APPROACH OF THE FEDERAL GOVERNMENT AND VARYING STATE REGULATIONS

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Hydraulic fracturing (or “fracking”) is a procedure used to increase the flow of oil or natural gas from a well drilled into a low permeability rock formation, like shale, that has been in use in the U.S. since the 1940s. The procedure uses a mixture of water, proppants (e.g. sand or ceramic beads), and various chemicals, which are pumped into subsurface rock formations at high pressure. The pressure creates fractures in the rock that extend outward from the well bore. The intent is to create a network of interconnected fractures, held open by the proppants, which allow oil and natural gas to flow from the pore spaces in the rock to the production well. This process, combined with horizontal drilling (to intersect natural vertical fractures in the shale), has turned otherwise unproductive shale formations into the largest oil and natural gas fields in the world. As of 2005, approximately ninety percent of all oil and natural gas wells drilled in the United States used hydraulic fracturing.

Several major “shale plays,” as the oil and gas industry calls them, exist in the U.S. The Marcellus Shale of the Appalachian Basin, located within parts of eight eastern states (New York, Pennsylvania, Ohio, West Virginia, Maryland, Kentucky, Tennessee, and Virginia) takes up a land area of about 54,000 square miles—an area larger than the state of Florida. In 2008, original estimates of its natural gas capacity ranged from 168 trillion cubic feet to 500 trillion cubic feet. Recently, however, the U.S. Geological Survey (USGS) estimated that the Marcellus Shale contains eighty-four trillion cubic feet of undiscovered, technically recoverable.

4. Id.; Hydraulic Fracturing of Oil & Gas Wells Drilled in Shale, supra note 1.
10. Id. at 4.
natural gas, and 3.4 billion barrels of undiscovered, technically recoverable natural gas liquids.\textsuperscript{11} This estimate contrasts sharply with the U.S. Department of Energy’s (DOE) estimate of 410 trillion cubic feet of technically recoverable natural gas,\textsuperscript{12} but still leaves the Marcellus as the largest reserve of shale gas in the U.S.\textsuperscript{13} The new findings by the USGS have, however, brought estimates of U.S. natural gas reserves under question and prompted the DOE to revise their previous figures on the Marcellus Shale.\textsuperscript{14}

Aside from the Marcellus Shale, the largest U.S. shale gas formations being drilled today include the Barnett in Texas, the Fayetteville in Arkansas, and the Haynesville in Louisiana and eastern Texas.\textsuperscript{15} Significant commercial shale gas production also occurs in the Lewis Shale of northwestern Arizona and southwestern Colorado, the Antrim Shale in Michigan, and the New Albany Shale in southern Indiana and northern Kentucky.\textsuperscript{16}

Significant U.S. shale oil formations include the Green River Formation in western Colorado, southeastern Utah, and southern Wyoming, and the Devonian-Mississippian black shales of the eastern U.S.\textsuperscript{17} The Green River Formation, which includes the Green River and Washakie Basins of Wyoming, the Uinta Basin of Utah, and the Piceance Basin of Colorado, contains the richest, most concentrated deposits of shale oil in the U.S.\textsuperscript{18} The largest shale oil formation in the U.S., however, is the Bakken

\textsuperscript{14} Urbina, supra note 12.
formation in the Williston basin of eastern North Dakota and western Montana. The recently discovered Niobrara formation in the Denver Basin of southeastern Wyoming and northern Colorado has been getting a great deal of attention as well, as oil companies are rapidly leasing land in hopes of capitalizing on the Niobrara’s oil-producing potential.

The utilization of hydraulic fracturing to exploit vast reserves of shale oil and gas in the U.S. raises significant concerns about its effect on human health and the environment. Specifically, there are concerns over four exposure pathways that could cause drinking water pollution. First, there is the concern that fracking chemicals might enter drinking water aquifers directly due to improper well construction or an over-aggressive “frac.” Second, there is the potential for pollution from the vast amounts of produced water and flowback, which the industry sends to a publicly owned treatment works (POTW), discharges into surface waters, or injects back into the ground. Third, surface drilling operations create the potential for spills and leaching of harmful waste products into the groundwater. Fourth, the fracturing of underground rock formations could potentially cause oil and gas reservoirs to communicate with groundwater aquifers.

The first three exposure pathways are particularly important because the chemicals used in the hydraulic fracturing process include both chemicals known to be toxic to humans and wildlife and known carcinogens.

Other concerns relate to the emission of methane (a much more potent greenhouse gas than carbon dioxide) into the atmosphere from shale gas

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22. Id. at 51–52, 58.

23. Id. at 66, 68–69.

24. Id. at 55–56.

25. Id. at 58.

26. Hydraulic Fracturing 101, supra note 1. For more information about the chemicals used in hydraulic fracturing, visit http://fracfocus.org. FracFocus is a national voluntary chemical disclosure website for the hydraulic fracturing industry. Some states are now requiring that well operators disclose chemical information for each individual well to FracFocus.
wells, intentional venting or flaring by workers, or from leaky pipes.\textsuperscript{27} Although natural gas is marketed as the “green” alternative to burning dirty oil and coal for heat and electricity, some argue that the greenhouse gas footprint of methane released from shale gas production is greater than that of conventional natural gas, oil, or coal.\textsuperscript{28}

I. FEDERAL REGULATION OF HYDRAULIC FRACTURING

Despite Congress’ power to regulate hydraulic fracturing activities under the Commerce Clause of the U.S. Constitution, regulation of the technology—and of the oil and gas industry in general—is largely left to the states.\textsuperscript{29} In fact, the oil and gas industry, including hydraulic fracturing, enjoys exemptions from several major federal environmental statutes, including: the Safe Drinking Water Act; the Resource Conservation and Recovery Act; the Emergency Planning and Community Right-To-Know Act; the Clean Water Act; the Clean Air Act; the Comprehensive Environmental Response, Compensation, and Liability Act; and the National Environmental Policy Act.\textsuperscript{30} Many of the exemptions for the above-listed statutes stem from or were strengthened by the Energy Policy Act of 2005.\textsuperscript{31}

A. The Safe Drinking Water Act

Congress enacted the Safe Drinking Water Act (SDWA) in 1974 to protect the quality of public drinking water in the U.S.\textsuperscript{32} The law regulates

\begin{footnotesize}
\begin{enumerate}
\item Tom Zeller, Jr., \textit{Studies Say Natural Gas Has Its Own Environmental Problems}, N.Y. TIMES, Apr. 11, 2011, \url{http://www.nytimes.com/2011/04/12/business/energy-environment/12gas.html?_r=1}.
\item See Robert W. Howarth et al., \textit{Methane and the Greenhouse-Gas Footprint of Natural Gas from Shale Formations}, CLIMATE CHANGE LETTERS (Mar. 13, 2011), available at \url{www.acsf.cornell.edu/2011Howarth-Methane} (finding that the greenhouse-gas footprint of shale gas is greater than conventional gas or oil, and 20 percent greater of a 20-year period than coal).
\item David Holmes, \textit{Fracking: The Music Video}, PROPUBLICA.ORG (May 12, 2011), \url{http://www.propublica.org/article/fracking-music-video}.
\item See REENE L. KOSNIK, THE OIL AND GAS INDUSTRY’S EXCLUSION AND EXEMPTIONS TO MAJOR ENVIRONMENTAL STATUTES 2 (2007), available at \url{http://www.earthworksaction.org/pubs/PetroleumExemptions1c.pdf} (discussing oil and gas industry exemptions from major environmental statutes).
\item \textit{Id.}
\end{enumerate}
\end{footnotesize}
all waters, whether from above ground or underground sources, that are actually or potentially designed for human consumption. Like most federal environmental laws in the U.S., the Environmental Protection Agency (EPA) is responsible for implementing the SDWA. Part C of the SDWA requires the EPA to establish minimum regulations for State Underground Injection Control (UIC) Programs. These regulations must “contain minimum requirements for effective programs to prevent underground injection which endangers drinking water sources.” It also mandates that State programs require a permit for any underground injection, mandates inspection, monitoring, recordkeeping and reporting requirements, and specifically disallows the promulgation of any rule, “which authorizes any underground injection which endangers drinking water sources.” A state must meet these minimum requirements in order to obtain primary enforcement and regulatory responsibility for underground injection activities within the state.

Originally, the SDWA defined “underground injection” as “the subsurface emplacement of fluids by well injection,” without any exceptions. Strangely, under this definition, the EPA considered hydraulic fracturing as exempt under the SDWA. In 1997, however, the U.S. Court of Appeals for the 11th Circuit ruled that “hydraulic fracturing activities constitute ‘underground injection’ under Part C of the SDWA.” Thus, the EPA and State UIC Programs were required to regulate hydraulic fracturing under the SDWA. In response, the EPA initiated a study of the potential for contamination of public water supplies from the hydraulic fracturing of coal seams for methane production, and concluded in 2004 that hydraulic fracturing “poses little or no threat to [underground sources of drinking water].” Environmental groups, federal legislators, and EPA employees

33. Id.
35. Id. § 300h(b).
36. Id. § 300h(b).
37. Id. § 300h-1.
39. FREE PASS FOR OIL AND GAS, supra note 6.
42. ENVTL. PROT. AGENCY, EVALUATION OF IMPACTS TO UNDERGROUND SOURCES OF DRINKING WATER BY HYDRAULIC FRACTURING OF COALBED METHANE RESERVOIRS: EXECUTIVE
questioned the accuracy of the 2004 report, with one veteran scientist alleging that EPA’s findings were “unsupportable” and that the report was “scientifically unsound.”

Despite questions over the report’s accuracy, Congress amended the SDWA in 2005 when it passed the Energy Policy Act. The amendments added two exclusions to the definition of underground injection: “(i) the underground injection of natural gas for purposes of storage; and (ii) the underground injection of fluids or propping agents (other than diesel fuels) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities.” Thus, regardless of whether the underground injection of water, proppants, and otherwise toxic chemicals associated with hydraulic fracturing actually endangers drinking water sources, the practice is exempt under the SDWA so long as diesel fuel is not used.

Many in the U.S refer to this exemption as the “Halliburton loophole” because of former Vice President Dick Cheney’s ties to Halliburton—the oil and gas giant that patented hydraulic fracturing in the 1940s, and of which Cheney served as CEO. Since 2005, two bills have been proposed in Congress that would have ended the SDWA exemption for hydraulic fracturing. The first was in the House of Representatives in 2008, where Representatives DeGette, Salazar, and Hinchey introduced a bill aimed at protecting drinking water from oil and gas development. The second came in 2009, when members of both houses of Congress introduced the Fracking Responsibility and Awareness of Chemicals Act (aptly named the “FRAC Act”). Neither bill made it through Congress.

SUMMARY

1. Inadequate Regulation of Hydraulic Fracturing, supra note 41.
4. 42 U.S.C § 300h(d)(1)(B).
5. Inadequate Regulation of Hydraulic Fracturing, supra note 41.
6. Id.
7. Id.
B. The Resource Conservation and Recovery Act

Subtitle C of the Resource Conservation and Recovery Act (RCRA) of 1976 is a comprehensive environmental statute that gives EPA the authority to regulate the generation, transportation, treatment, storage, and disposal of hazardous waste—commonly referred to as a “cradle-to-grave” regulatory scheme.\textsuperscript{52} Subtitle D provides a framework for regulating non-hazardous solid waste.\textsuperscript{53}

RCRA defines “hazardous waste” as:

[A] solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may—

(A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or

(B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or other managed.\textsuperscript{54}

RCRA required EPA to determine criteria for identifying and listing hazardous waste subject to regulation under Subtitle C.\textsuperscript{55} Drilling fluids, produced waters, and other wastes associated with oil and natural gas exploration, development, or production (oil field wastes) were explicitly exempted from listing as hazardous waste until EPA conducted a Regulatory Determination as to whether such wastes warranted regulation under Subtitle C, but no sooner than October 21, 1982.\textsuperscript{56}

Before the EPA completed their Regulatory Determination, Congress enacted the Solid Waste Disposal Act (SWDA) in 1980.\textsuperscript{57} The SWDA exempted oil-field wastes from Subtitle C unless EPA could prove that the


\textsuperscript{53} KOSNIK, supra note 30, at 6.


\textsuperscript{55} Id. § 6921(a).

\textsuperscript{56} Id. § 6921(b)(2).

\textsuperscript{57} KOSNIK, supra note 30, at 6.
wastes posed a hazard to human health and the environment. In 1988, the EPA completed their required Regulatory Determination of oil-field wastes and determined that regulation under Subtitle C was not necessary because existing state and federal regulations were adequate and the economic impact to the petroleum industry would be great. The result of this determination is that EPA regulations now exclude oil-field wastes from the definition of hazardous wastes, meaning that these wastes are subject only to Subtitle D as a solid waste.

The implications of this classification are significant. Under Subtitle D, for example, solid wastes must be stored in a manner that does not constitute a fire, health, or safety hazard, and will not result in spillage. Generally, oil field wastes from hydraulic fracturing are stored on-site in tanks or surface pits. If regulated under Subtitle C, the surface pits (or “surface impoundments”) would be required to have a liner “designed, constructed, and installed to prevent any migration of wastes out of the impoundment to the adjacent subsurface soil or ground water or surface water at any time during the active life . . . of the impoundment.” This is just one example of the less protective requirements of Subtitle D as compared to Subtitle C. The oil and gas industry is also subject to less stringent requirements for the transportation, treatment, and disposal of oil-field wastes under Subtitle D than they would be under Subtitle C.

C. The Emergency Planning and Community Right-To-Know Act

Enacted in 1986, the Emergency Planning and Community Right-To-Know Act (EPCRA) is the national legislation on community safety and is designed to help communities protect public health, safety, and the environment from chemical hazards. Section 313 of EPCRA requires EPA and the states to collect data on releases and transfers of listed toxic chemicals that are manufactured, processed, or otherwise used above threshold quantities by certain industries. This includes data related to point and fugitive on-site air releases, water releases, on- and off-site land

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58. Id.
59. Id. at 6–7.
63. 40 C.F.R. § 264.221(a) (2011).
releases, underground injection, transfers to waste management facilities, and on-site waste treatment and management procedures. The data are then made available to the public via EPA’s Toxics Release Inventory.

Industrial facilities covered by the toxic chemical reporting requirements of EPCRA include those facilities with ten or more employees, with a Standard Industrial Classification (SIC) Code of 20 through 39, and that manufacture, process, or otherwise use a threshold quantity of listed toxic chemicals. The Administrator of the EPA may elect to add or delete SICs from the list of those industries subject to the reporting requirements of EPCRA, but has yet to include the oil and gas industry—SIC Code 13.

**D. The Clean Water Act**

Originally enacted as the Federal Water Pollution Control Act, the Clean Water Act (CWA) provides the basic structure for regulating discharges of pollutants into “waters of the United States” and regulating quality standards for surface waters. Under the CWA, it is unlawful to discharge any pollutant from a point source (a “discrete conveyance,” such as a ditch, pipe, tunnel, or conduit) into navigable waters without a permit.

EPA administers the National Pollution Discharge Elimination System (NPDES) permit program to control discharges. In 1987, Congress amended the CWA to require EPA to develop a permitting program for stormwater runoff. The amendments, however, exempted mining operations and “oil and gas exploration, production, processing, or treatment operations or transmission facilities” from the permitting requirement, provided the runoff consisted entirely of flows from

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72. Summary of the Clean Water Act, supra note 70.
73. FREE PASS FOR OIL AND GAS, supra note 6.
conveyances, such as pipes or channels, which did not come in contact with on-site materials or waste products.\textsuperscript{74}

Interpreting this exemption, EPA asserted authority to require stormwater permits for discharges from oil and gas construction facilities on the theory that sediment from the construction site constituted a pollutant.\textsuperscript{75} In 2005, however, Congress amended the CWA through the Energy Policy Act, by defining the term “oil and gas exploration, production, process, or treatment operations and transmission facilities” to include construction activities.\textsuperscript{76} Thus, this amendment extended the stormwater permit exemption to all oil and gas field operation activities, which includes those activities associated with hydraulic fracturing.

Following the 2005 amendment, EPA issued a final rule exempting stormwater discharges of sediment from oil and gas construction facilities.\textsuperscript{77} The Natural Resources Defense Council challenged this rule, and the Ninth Circuit Court of Appeals held that EPA's promulgated rule was “arbitrary and capricious and constitutes an impermissible construction . . . of the CWA.”\textsuperscript{78} The court vacated the rule and subsequently denied EPA's request for a rehearing.\textsuperscript{79}

The result is that oil and gas construction facilities remain subject to the stormwater permitting requirements of the CWA and associated EPA regulations. Additionally, where applicable, the oil and gas industry is subject to the permitting requirements associated with discharging a pollutant into navigable waters. These requirements limit the concentration and quantity of a pollutant that can be discharged under the terms of a NPDES permit, and establish monitoring and recording requirements, among other permit conditions.\textsuperscript{80}

EPA also requires certain oil drilling facilities to prepare and implement Spill Prevention, Control, and Countermeasure (SPCC) plans to prevent the discharge of oil into navigable waters or adjoining shorelines.\textsuperscript{81} The regulations for the SPCC plans were promulgated under section 311(j)(1)(C) of the Clean Water Act in 1973 and were amended by the Oil

\textsuperscript{75} KOSNIK, supra note 30, at 10–11.
\textsuperscript{76} 33 U.S.C. § 1362(24).
\textsuperscript{78} NRDC v. U.S. Env'tl. Prot. Agency, 526 F.3d 591, 608 (9th Cir. 2008).
\textsuperscript{79} Regulation of Oil and Gas Construction Activities, supra note 77.
\textsuperscript{80} See 40 C.F.R. 122.41–122.50.
Pollution Act of 1990.\textsuperscript{82} Facilities that must prepare and implement SPCC plans include those that are non-transportation related; have an aggregate aboveground storage capacity over 1,320 gallons or a buried storage capacity over 42,000 gallons; and have a reasonable expectation of discharging into or upon navigable waters or adjoining shorelines.\textsuperscript{83} Furthermore, the SPCC plan must be prepared in accordance with good engineering practices, provide for inspections, tests, and recordkeeping procedures, and include training of personnel to prevent discharges.\textsuperscript{84}

\textit{E. The Clean Air Act}

The Clean Air Act (CAA) is a comprehensive federal statute that regulates air emissions from stationary and mobile sources.\textsuperscript{85} The CAA authorizes EPA to regulate hazardous air pollutant emissions and to protect public health and welfare by establishing National Ambient Air Quality Standards (NAAQS).\textsuperscript{86} States are required to meet the NAAQS by developing State Implementation Plans (SIPs) to regulate industrial sources of air pollution in the state.\textsuperscript{87}

Section 112 of the CAA requires EPA to establish emission standards for Hazardous Air Pollutants (HAPs) from “major source” and “area source” categories that require the maximum degree of reduction in emissions that EPA determines to be achievable—commonly referred to as Maximum Achievable Control Technology (MACT).\textsuperscript{88} Major sources are defined as “any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit... in the aggregate, ten tons per year or more of any hazardous air pollutant or twenty-five tons per year or more of any combination of hazardous air pollutants.”\textsuperscript{89} An area source is “any stationary source of hazardous air pollution that is not a major source.”\textsuperscript{90}

\begin{footnotes}
\textsuperscript{83} 40 C.F.R. § 112.1.
\textsuperscript{84} Id. § 112.7.
\textsuperscript{86} Id.
\textsuperscript{87} Id.
\textsuperscript{88} Id.
\textsuperscript{89} 42 U.S.C. § 7412(a)(1).
\textsuperscript{90} Id. § 7412(a)(2).
\end{footnotes}
The regulations applicable to the oil and gas industry under the CAA impose more stringent requirements on major sources of HAP emissions than on area sources. Additionally, major sources are required to obtain a Title V permit (as specified in subchapter V of the CAA and 40 CFR parts 70 and 71), while area sources are not. Under EPA regulations, however, HAP emissions from oil and gas exploration or production wells are exempt from the aggregation rule within the statutory definition of “major source.” Since most oil and gas wells, on their own, do not emit the threshold limit of HAPs under the statutory definition, they are not required to obtain a Title V permit. This leaves HAP emissions from oil and gas wells essentially unregulated under the CAA.

F. The Comprehensive Environmental Response, Compensation, and Liability Act

In 1980, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and amended the Act in 1986 with the Superfund Amendments and Reauthorization Act (SARA). CERCLA establishes a federal “Superfund” to pay for the cleanup of abandoned or uncontrolled hazardous waste sites. Additionally, the fund pays for the cleanup of accidents, spills, and other emergency releases of hazardous substances into the environment. EPA has the power under CERCLA to hold potentially responsible parties (PRPs) financially liable for the costs of cleaning up a hazardous waste site or to direct private party cleanup when the responsible party is known.

CERCLA defines a hazardous substance as those substances designated or listed under various statutes, including hazardous wastes listed pursuant to RCRA, as amended by the SWDA, but excludes petroleum. The petroleum exception includes crude oil, natural gas, natural gas liquids, liquefied natural gas, and mixtures of natural gas and synthetic gas. This

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92. 40 C.F.R. § 63.764(f) (2012).
93. Id. § 63.761.
96. Id.
97. Id.
98. Id.
100. Id.
exclusion means that spills and releases of petroleum, crude oil, and natural gas, which contain chemicals otherwise covered under the definition of hazardous substance, are immune to federal regulation under CERCLA. 101 Environmental groups argue that this exclusion gives oil companies little incentive to prevent and clean up spills. 102

G. The National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 established a framework for protecting the environment by requiring all branches of government to properly consider the environmental impacts of any major federal action that significantly affects the environment. 103 NEPA requires federal agencies to take a hard look at the environmental impacts of a proposed action and possible alternatives. 104 Federal agencies do this by preparing Environmental Assessments (EAs) to determine if the proposed action will result in significant environmental impacts. If the EA reveals a significant environmental impact, subsequent Environmental Impact Statements (EISs) must assess possible alternatives and require an opportunity for public involvement. 105

The Energy Policy Act of 2005 created a rebuttable presumption that certain oil and gas related activities authorized by the U.S. Department of the Interior in managing public lands, and the U.S. Department of Agriculture in managing National Forest System Lands, are subject to a “categorical exclusion” under NEPA. 106 The activities presumed to qualify for a categorical exclusion include activities conducted pursuant to the Mineral Leasing Act for the purpose of exploration or development of natural gas if the activity falls under one of five categories. 107 The excluded activities are presumed to have no significant environmental impact, unless the public can prove “extraordinary circumstances in which a normally excluded action may have a significant environmental effect.” 108 In effect, though, oil and gas activities are no longer subject to NEPA's procedural requirements.

101. KOSNIK, supra note 30, at 5.
102. FREE PASS FOR OIL AND GAS, supra note 6.
104. KOSNIK, supra note 30, at 15.
105. Id.
107. Id. § 15942(b).
II. STATE REGULATION OF HYDRAULIC FRACTURING

Generally, the states are free to regulate hydraulic fracturing as they see fit, with the exception that state regulations must meet the minimum requirements of any applicable federal regulations. States have come up with regulatory schemes of varying complexity. Some states have specific rules related to hydraulic fracturing, while others regulate the process solely under their general oil and gas permitting requirements.

A. Colorado

The Oil and Gas Conservation Act (OGCA) is the primary statute governing oil and gas development in Colorado.109 As part of the legislative declaration, the OGCA states that it is in the public interest to “[f]oster the responsible, balanced development, production, and utilization of the natural resources of oil and gas in the state of Colorado in a manner consistent with the protection of public health, safety, and welfare, including protection of the environment and wildlife resources.”110 The Act gives the Colorado Oil and Gas Conservation Commission (COGCC) the authority to regulate:

[o]il and gas operation so as to prevent and mitigate significant adverse environmental impacts on any air, water, soil, or biological resource resulting from oil and gas operations to the extent necessary to protect public health, safety, and welfare, including protection of the environment and wildlife resources, taking into consideration cost-effectiveness and technical feasibility.111

Under regulations promulgated by the COGCC, an operator must apply for a permit to drill that indicates the proposed well location, the location of water wells, and the location of other water sources within 400 feet of the wellhead.112 The Director of the COGCC may withhold approval if there is “reasonable cause to believe the proposed well or oil and gas location . . . presents an imminent threat to public health, safety and

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110. Id. § 34-60-1021(1)(A)(I).
111. Id. § 34-60-106(2)(d).
welfare, including the environment, or a material threat to wildlife resources.\textsuperscript{113}

Operators wishing to perform “enhanced recovery operations,” must apply for additional authorization from COGCC and cannot commence construction until receiving said authorization.\textsuperscript{114} Where the injection of fluids for enhanced recovery operations is proposed, like fracking, the application must describe the proposed casing for the well, provide a statement of the type of fluid to be injected, provide a chemical analysis of the fluid to be injected, and describe the proposed “stimulation program.”\textsuperscript{115} Well casings must be designed to prevent migration of oil, gas, or water that “may result in the degradation of ground water.”\textsuperscript{116}

Additionally, pits used during oil and gas exploration and production “shall be constructed and operated to protect public health, safety, and welfare and the environment . . . from significant adverse environmental, public health, or welfare impacts from [exploration and production] waste,” unless permitted by law.\textsuperscript{117} Operators must apply for an Earthen Pit Permit to construct and utilize all production pits.\textsuperscript{118} Pits constructed after April 1, 2009, with some exceptions, must be lined.\textsuperscript{119}

Spills of exploration and production waste must be “controlled and contained immediately upon discovery to protect the environment, public health, safety, and welfare, and wildlife resources.”\textsuperscript{120} Spills or releases of certain sizes must be reported to the COGCC within different time frames, but spills “of any size which impact or threaten to impact any waters of the state, residence or occupied structure, livestock, or public byway” must be reported within twenty-four hours.\textsuperscript{121} Most wastes from drilling operations may be injected back into the ground with a permit, or disposed of at a commercial solid waste facility.\textsuperscript{122}

In April of 2012, the revised Rules of the COGCC became effective.\textsuperscript{123} The revised Rules were adopted in an effort “to increase the transparency of

\begin{footnotes}
\item 113. Id. § 404-1:303(m).
\item 114. Id. § 404-1:401(a).
\item 115. Id. § 404-1:404(b)(4)(C)–(F).
\item 116. Id. § 404-1:317(d).
\item 117. Id. § 404-1:902(a).
\item 118. Id. § 404-1:903(a).
\item 119. Id. § 404-1:904.
\item 120. Id. § 404-1:906(a).
\item 121. Id. § 404-1:906(b).
\item 122. Id. § 404-1:907.
\end{footnotes}
hydraulic fracturing operations in the State of Colorado and, at the same
time, afford appropriate protections for vendor, service provider and
operator trade secrets.” Additionally, the new rules are intended to
“increase the commission Staff’s ability to inspect and oversee hydraulic
fracturing operations.”

The revised Rules require operators to complete a chemical disclosure,
which becomes public record. The disclosure is to include all chemicals
intentionally added to the base fluid of a hydraulic fracturing operation, with
only one primary exception. The primary exception is an operator’s
ability to protect the disclosure of chemicals that fall under a trade secret.
For a chemical to be considered a trade secret, the specific identity or the
concentration of the chemical must comply with 7-7-102(4) of the Colorado
Uniform Trade Secrets Act. While chemicals that fall under a trade secret
are not disclosed to the public, an operator must still supply to the
Commission information relevant to the chemical identifier. Furthermore,
under certain circumstances, a health professional can obtain chemical
information for chemicals that are trade secrets, but must agree to non-
disclosure.

In addition to the disclosure requirements, the new rules also include
additional notice procedures for hydraulic fracturing operations. First,
operators must provide landowners located within 500 feet of a proposed
well with a COGCC information sheet on hydraulic fracturing. Second,
operators must provide the Commission written notice of intended
hydraulic fracturing operations at least forty-eight hours before
commencement.

Despite what seems to be a comprehensive set of regulatory control on
the hydraulic fracturing industry, fracking operations in Colorado have

124. Id. at 14.
125. Id.
127. Id.
128. Id.
129. Id. § 404-1:100.
130. OIL AND GAS CONSERVATION COMM’N, COLO., supra note 123 at 5.
132. Id. § 404-1:305e(1)A.
133. Id. § 404-1:316C.
134. In 1990, and again in 1994, the EPA and the Interstate Oil and Gas Compact Commission
(“IOGCC”) issued guidelines for the regulation of oil and gas exploration and production wastes for use
by member states. In 2000, 2005 and 2010, STRONGER (State Review of Oil and Natural
Gas Environmental Regulations, Inc., an independent, non-profit, multi-stakeholder organization
comprised of federal and state officials, and environmental and industry representatives) expanded,
led to a number of court cases over human exposure to harmful fracking chemicals. In *Evenson v. Antero Resources*, a class action lawsuit, Plaintiffs alleged acute health effects, like burning eyes and throats, from fracking operations in Mesa, Colorado.\(^{135}\) In another case, *Strudley v. Antero Resources*, Plaintiffs alleged that fracking operations within a mile of their property contaminated their well.\(^{136}\) The court in *Strudley* granted Defendant’s motion to dismiss, holding that Plaintiffs did not meet their burden of establishing a prima facie case for exposure to chemicals alleged to have caused their injuries.\(^{137}\) This holding came after the court issued a “Lone Pine Order.”\(^{138}\) A “Lone Pine Order” is a court order in mass toxic tort cases requiring plaintiffs to, at a minimum, show: (1) the identity of the chemical or substance that caused the injury; (2) the specific disease, illness, or injury caused by the substance; and (3) a causal link between exposure and the injury.\(^{139}\) Some “Lone Pine Orders” also require a showing of the amount of the substance or chemical to which the plaintiffs were exposed, expert medical opinion to exclude other causes, and specific dates of exposure to the toxic substance.\(^{140}\)

**B. New York**

Currently, New York State does not allow hydraulic fracturing in its portion of the highly sought-after Marcellus Shale. In December 2010, then New York State Governor David Patterson issued an Executive Order banning the practice of “high-volume, horizontal hydraulic fracturing” in the Marcellus Shale region until the Department of Environmental Conservation (DEC) completed a review to certify that the practice was

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\(^{137}\) *Id.* at 3.

\(^{138}\) *Id.* at 4–6.


\(^{140}\) *Id.* at *6–7.
safe.\textsuperscript{141} At the time of the Executive Order, DEC had already stopped issuing drilling permits in the Marcellus Shale until it completed its review of the practice.\textsuperscript{142} The Executive Order’s “moratorium” remains in effect, as the DEC continues its review process.\textsuperscript{143}

In 2009, DEC issued a Draft Supplemental Generic Environmental Impact Statement (SGEIS) to provide a comprehensive review of issues unique to horizontal drilling and high-volume hydraulic fracturing.\textsuperscript{144} After a great deal of public comment, DEC revised the Draft SGEIS and released a Revised Draft SGEIS in September 2011.\textsuperscript{145} The Revised SGEIS recommends prohibiting high-volume hydraulic fracturing in the New York City and Syracuse watersheds, and on state-owned land including parks, forest areas, and wildlife management areas.\textsuperscript{146} Under regulations that DEC will issue in accordance with these recommendations, hydraulic fracturing will only be allowed on privately-owned lands under “rigorous and effective controls.”\textsuperscript{147}

DEC recently proposed regulations; the public comment period ended on December 12, 2011.\textsuperscript{148} The proposed regulations would, among other things: prohibit the drilling of wells within 500 feet of a private water well or within 2,000 feet of a public drinking water supply well or reservoir for at least three years; require three well casings to prevent gas migration; impose strict stormwater control measures; and require full disclosure to DEC of all products utilized in the fracturing process.\textsuperscript{149} Additionally, the proposed regulations would require a DEC-approved plan for disposing of flowback water, and would institute a process to monitor the disposal of waste streams from the drilling process.\textsuperscript{150}

\begin{itemize}
\item \textsuperscript{142} Id.
\item \textsuperscript{145} Id.
\item \textsuperscript{147} Id.
\item \textsuperscript{149} \textit{New Recommendations Issued in Hydraulic Fracturing Review}, supra note 147.
\item \textsuperscript{150} Id.
\end{itemize}
Originally, it was expected that DEC would begin issuing hydraulic fracturing permits sometime in 2012, but the DEC Commissioner recently stated that the review process will likely take longer than originally expected. For New York, this means that permits for hydraulic fracturing are unlikely to be issued until at least 2013. Multiple towns across New York State, however, are taking the matter into their own hands by using zoning laws to ban hydraulic fracturing. At least twelve towns in New York State have already banned hydraulic fracturing through zoning ordinances, and more plan to follow their lead.

Whether towns have the authority to do this was the issue in a lawsuit brought by Anschutz Exploration Corporation against the Town of Dryden, NY. Anschutz argued that state conservation law gave the State of New York, not its towns, the sole authority to regulate the gas industry. The Town argued that banning is not “regulation,” and that the home rule provision of the New York State Constitution gives towns the authority, through zoning, to decide where they want industry. In February 2012, the New York Supreme Court ruled that Dryden’s zoning amendment banning oil and gas exploration within the Town, including fracking, was not preempted by the Oil, Gas and Solution Mining Law (OGSML). The court held that the OGSML preempts all local laws or ordinances related to the regulation of oil and gas exploration, but does not preempt local zoning power to regulate land use in connection with oil and gas exploration.

In a similar decision that month, the New York Supreme Court ruled that the Town of Middlefield’s zoning ordinance banning oil and gas drilling was not preempted by the Environmental Conservation Law (ECL). Here, the court held that the ECL preempted all local laws and ordinances relating to the regulation of oil and gas industries, but does not preempt local government jurisdiction over local roads, or the rights of

152. *Id.*
154. *Id.*
155. *Id.*
156. *Id.*
157. *Id.*
159. *Id.*
government under real property law. The court found that the State gets to control the method and manner of oil and gas exploration, but municipalities can control where such exploration takes place. Courts in at least one other state, however, have found that comprehensive oil and gas regulatory schemes do preempt local jurisdictions from banning hydraulic fracturing. Where other states will fall on the issue of preemption is still to be determined.

C. Pennsylvania

The Pennsylvania Department of Environmental Protection (DEP) administers regulations applicable to oil and gas drilling in the State. No person is allowed to drill a well unless they obtain a permit from DEP. DEP may deny a permit application if “the issuance of such permit would result in a violation of [the Pennsylvania Oil and Gas Act] or any other applicable environmental statute, rule, or regulation.”

A landowner who experiences a diminution in water quality as a result of drilling may request an investigation by DEP. DEP must perform an investigation within ten days and make a determination within forty-five days. If DEP finds that the drilling operations caused the diminution in water quality, then the well operator must “restore or replace the affected supply with an alternate source of water adequate in quantity or quality for the purposes served by the supply.” If the pollution occurs within six months of drilling, DEP presumes that the well operator is responsible for water pollution within 1,000 feet of the well, unless the well operator provides an affirmative defense. In order to prevent pollution or diminution of fresh groundwater, wells must have a permanent casing that runs through the fresh water strata.

When it comes to the disposal of drilling wastes, DEP regulations require the well operator to prepare a control and disposal plan for the

161. Id.
162. Id.
164. 25 Pa. CODE § 78.11(a) (2011).
166. Id. § 601.208(b).
167. Id.
168. Id. §§ 601.208(a), (b).
169. Id. § 601.208(b).
170. Id. § 601.207(b).
disposal of wastes, including “stimulation fluids” (also known as fracking fluids). The plan must identify waste control and disposal methods consistent with the Pennsylvania Clean Streams Law and the Solid Waste Management Act. The well operator must control and dispose of wastes in a manner that prevents the pollution of waters of Pennsylvania. Before disposal, well operators may store fracking fluid and certain other wastes from the drilling process in open pits, provided the pits are lined and designed to contain all pollution substances and wastes.

Specifically, DEP requires applications for drilling permits in the Marcellus Shale to include a mandatory water plan that will govern water withdrawal and disposal issues. Additionally, DEP keeps a list of chemicals used in the fracking process and requires well operators to keep a list available of all chemicals used at each well site.

Perhaps in response to the New York court decisions on local zoning regulations discussed above, the Pennsylvania Legislature recently passed a pro-fracking bill prohibiting local jurisdictions from banning hydraulic fracturing activities within their boundaries. Local jurisdictions are, however, allowed to impose an environmental impact fee on every fracked natural gas well.

D. Texas

The Oil and Gas Division of the Texas Railroad Commission (the Commission) is the main regulatory agency that administers regulations related to oil and gas drilling. Any operator wishing to drill an oil and gas well must apply for a permit to drill, deepen, reenter, or plug back. All well casings should isolate and seal off all “usable-quality water zones” to

172. Id. § 78.55(b).
173. Id. § 78.54.
174. Id. § 78.56(a)(1).
176. Id.
178. Id.
179. 16 TEX. ADMIN. CODE § 3.5(a) (2011). “Plug back” is the process of placing cement or a mechanical plug in the bottom of a previously drilled well to prevent water accumulation and continued production, and also allows well operators to re-drill the same well at a shallower depth.
“prevent contamination or harm.”

Additionally, operators may not “cause or allow pollution of surface or subsurface water in the state.”

Regulations related to drilling wastes provide for the use of pits, provided that the operator obtains a permit from the Commission. The Commission may only issue a permit if they determine that “the maintenance or use of such pit will not result in the . . . pollution of surface or sub-surface waters.” Operators may dispose of certain low chloride fluids and other wastes without a permit by spreading them over the land on which they were generated, or by burial. Otherwise, a permit is required for any other disposal method. All oil and gas wastes may be injected underground into “nonproducing zones of oil, gas, or geothermal resources bearing formations,” provided that “the formations are separated from freshwater formation by impervious beds which will give adequate protection to such freshwater formations.”

In June 2011, Texas passed a law requiring the Commission to promulgate rules for the disclosure of chemicals used in hydraulic fracturing. The Commission approved a proposed rule in August that would apply to hydraulic fracturing treatments on wells drilled after the effective date of the rule. This proposed rule would require disclosure to the well operator of each chemical ingredient added to the hydraulic fracturing fluid. The well operator would then be required to submit this information, as is currently proposed in Colorado, to the “FracFocus” website.

E. Louisiana

The Louisiana Department of Natural Resources (DNR) Office of Conservation is responsible for regulating the exploration and production of

180. Id. § 3.13(a).
181. Id. § 3.8(b).
182. Id. § 3.8(d)(2).
183. Id. § 3.8(d)(6).
184. Id. § 3.8(d)(3).
185. Id. § 3.8(d)(1).
186. Id. § 3.9(1), (2).
188. Id.
189. Id.
190. Id.
An operator of a hydraulic fracturing well must obtain a work permit before commencing well construction operations. The work permit application must include a plan for the construction and stimulation of the fracking well. Before drilling can begin, the operator also needs to obtain a permit to drill. To protect fresh water sources, DNR requires well casings of varying depths dependent on the depth of the well itself.

Flowback from hydraulic fracturing activities must be stored in tanks or lined pits, but are exempt from Louisiana Hazardous Waste Regulations. Pits must be constructed above the 100-year floodplain, and temporary containment pits must be closed within six months of well completion. Pits must be closed in a manner that protects the soil, surface water, ground water, and underground sources of drinking water. Before closing a pit, the pit contents are tested for multiple parameters, including pH, heavy metals, and oil and grease content.

The well operator is responsible for the proper handling and transportation of exploration and production waste taken offsite for storage, treatment, or disposal. Offsite disposal must be at an approved commercial facility. The operator may elect to dispose of such wastes at a DNR or Department of Environmental Quality (DEQ) permitted facility. Waste received at a DEQ-permitted facility becomes the sole responsibility of DEQ. Furthermore, the DEQ regulations require well operators to develop and implement a Spill Prevention and Control Plan.

Recently, the Louisiana DNR adopted a new rule requiring oil and gas well operators to disclose the composition and volume of the fracking fluids.

192. Id. at 10.
194. Id. § 109(B).
195. Id. § 303(A).
196. Id. § 501.
197. STRONGER, INC., supra note 192, at 10.
198. LA. ADMIN. CODE. tit. 43, pt. XIX § 311(A).
199. Id. § 311(C).
200. Id. § 503(D).
201. Id.
202. Id. § 503(E).
203. Id.
204. STRONGER, INC., supra note 192, at 11.
they use after completing the well.\textsuperscript{205} The rule requires disclosure to the Office of Conservation or a public registry, such as “FracFocus.”\textsuperscript{206}

\textbf{F. Wyoming}

The Wyoming Oil and Gas Conservation Commission (WOGCC) regulates oil and gas development in the state, handles the permitting process, and enforces Wyoming’s oil and gas statutes and regulations. Before drilling activity can commence, the well operator must apply for and obtain a permit to drill or deepen a well.\textsuperscript{207} The permit application must include a description of the casing and cementing programs, in addition to a completion and stimulation (hydraulic fracking) program, which includes the stimulation fluid and proposed chemical additives and their concentrations.\textsuperscript{208}

For onsite storage of waste associated with the drilling process in pits, the operator must obtain a permit from the WOGCC\textsuperscript{209} and approval from the State Oil and Gas Supervisor.\textsuperscript{210} Applications for pit construction shall be approved only if “the pit will not cause the contamination of surface or groundwater, and endanger human health or wildlife.”\textsuperscript{211} Under certain circumstances, such as when pits are proposed in areas with shallow groundwater or immediately adjacent to the Green or Colorado River drainage basin, the Supervisor shall require pits to be lined.\textsuperscript{212} Additionally, the operator must not “pollute streams, underground water, or unreasonably damage or occupy the surface of the leased premises or other lands,” and is not allowed to discharge any fluid contents of any pit without a permit issued by the Wyoming Department of Environmental Quality.\textsuperscript{213} Drilling fluids may not be discharged into “live water or into drainages that lead to live waters of the state.”\textsuperscript{214}

\begin{itemize}
\item \textsuperscript{206} Id.
\item \textsuperscript{207} WY. ADMIN. CODE. OIL. GEN. chp. 3 § 8 (2011).
\item \textsuperscript{208} Id.; see also id. § 45.
\item \textsuperscript{209} Id. ch. 4 § 1(a).
\item \textsuperscript{210} Id. § 1(h).
\item \textsuperscript{211} Id. § 1(a).
\item \textsuperscript{212} Id. § 1(w).
\item \textsuperscript{213} Id. § 1(ee).
\item \textsuperscript{214} Id.
\end{itemize}
In North Dakota, the State Legislature has declared that it is “in the public interest to foster, to encourage, and to promote the development, production, and utilization of natural resources of oil and gas in the state in such a manner as will prevent waste.”\(^{215}\) To achieve this, the North Dakota legislature empowered the North Dakota Industrial Commission (NDIC) to be the primary governing body of oil and gas operations in the state, through the administrative code known as the Century Code.\(^{216}\) NDIC has in turn delegated administration of North Dakota oil and gas rules to the Oil and Gas Division (NDOGD). NDOGD administers items such as well permitting, drilling and casing construction, flowback water collection and disposal, and use of chemicals associated with drilling.\(^{217}\) In addition to NDIC and NDOGD, governing bodies relevant to oil and gas production include the North Dakota Water Commission, which is responsible for water appropriations, and the North Dakota Department of Health, which partakes in the safe cleanup of any discharge to the environment.\(^{218}\)

Hydraulic fracturing is an acceptable means of recovery in North Dakota. According to the North Dakota Century Code: “Notwithstanding any other provision of law, the legislative assembly designates hydraulic fracturing, a mechanical method of increasing the permeability of rock to increase the amount of oil and gas produced from the rock, an acceptable recovery process in this state.”\(^{219}\)

As in most states, the governing code provides several general requirements to address oil and gas production. These general requirements are applicable to all wells, including hydraulically fractured wells. Some relevant provisions include bonding,\(^{220}\) permitting,\(^{221}\) well location,\(^{222}\) site construction\(^{223}\) including waste disposal,\(^{224}\) strata sealing,\(^{225}\) and casing.\(^{226}\) In addition to the general requirements, North Dakota also has specific

\(^{216}\) Id. § 38-8-04.
\(^{217}\) Id.
\(^{218}\) N.D. CENT. CODE § 61-02-14 (West 2011); id. § 61-28-04.
\(^{219}\) N.D. CENT. CODE § 38-8-25.
\(^{220}\) N.D. CENT. CODE ANN. § 43-02-03-15 (West 2011).
\(^{221}\) Id. § 43-02-03-16.
\(^{222}\) Id. § 43-02-03-18.
\(^{223}\) Id. § 43-02-03-19.
\(^{224}\) Id.
\(^{225}\) Id.
\(^{226}\) Id.
hydraulic fracturing requirements that are addressed by the code.\textsuperscript{227} These hydraulic fracturing-specific provisions were recently altered by NDIC to address, among other items, new hydraulic fracturing requirements. NDIC approved the revisions on January 23, 2012 and subsequently went into effect April 1, 2012.\textsuperscript{228}

A major driver for the hydraulic fracturing rule alterations was to “do away with open pits for production wastewater.”\textsuperscript{229} As such, one major change that went into effect is the prohibition, for all wells drilled below 5,000 feet, to use open pits to store liquids left over from the drilling process.\textsuperscript{230} In lieu of open pits, oil companies must now separate liquids from rock cuttings, and the liquids are to be hauled away or recycled. Another major change includes the mandatory disclosure of chemicals used for fracking, which must be reported within sixty days to the FracFocus website.\textsuperscript{231}

### III. Recent Developments in Hydraulic Fracturing Regulation

In April 2011, the Department of the Interior’s Bureau of Land Management (BLM) announced that they would be updating their Programmatic Environmental Impact Statement (EIS) for the Allocation of Oil Shale and Tar Sands Resources on Lands Administered by the BLM in Colorado, Utah, and Wyoming.\textsuperscript{232} In 2008, BLM amended land use plans in Colorado, Utah, and Wyoming to open up approximately two million acres of land to the possible development of oil shale.\textsuperscript{233} These amendments were supported by the preparation of a Programmatic EIS and Record of Decision (ROD), as required under the Energy Policy Act of 2005.\textsuperscript{234} BLM will now take a “fresh look” at the 2008 Programmatic EIS and ROD, to determine if it is appropriate for the two million acres to remain available for potential development of oil shale.\textsuperscript{235} This process is still ongoing.

\textsuperscript{228} \textit{Id.} § 43-02-03-27.
\textsuperscript{229} \textit{Id.}
\textsuperscript{230} \textit{Id.} § 43-02-03-19.4
\textsuperscript{231} \textit{Id.} § 43-02-03-27.1
\textsuperscript{233} \textit{Id.}
\textsuperscript{234} \textit{Id.}
\textsuperscript{235} \textit{Id.}
On July 28, 2011, EPA announced a proposal to promulgate a New Source Performance Standard (NSPS) under the Clean Air Act (CAA) that would apply to oil and natural gas exploration and production operations.\(^{236}\) The NSPS would mandate the use of “reduced emissions completion” technology or pit flaring for all new hydraulically fractured natural gas wells.\(^{237}\) EPA is proposing the new NSPS in response to a consent decree between EPA and two environmental groups resulting from a lawsuit filed against EPA under the CAA.\(^{238}\) The consent decree required EPA to promulgate a final rule by February 28, 2012.\(^{239}\)

On October 20, 2011, EPA announced that it would begin the process of developing standards for wastewater discharges produced by natural gas extraction from underground coalbed and shale formations.\(^{240}\) The announcement acknowledged that the federal government lacks a comprehensive set of regulations for the disposal of wastewater from natural gas extraction activities, and intends to develop a comprehensive set of regulations with the input of industry and public health groups.\(^{241}\)

On November 3, 2011, EPA announced final plans to perform a comprehensive study of water in hydraulic fracturing.\(^{242}\) The study will look at the full cycle of water in fracking, from its acquisition before use to its ultimate treatment and disposal.\(^{243}\) EPA planned to release initial research findings in 2012 and a final report in 2014, but continuing political and administrative delays, requests for submission of further studies, and bureaucratic wrangling with the industry has hampered the release of any comprehensive federal assessment on hydraulic fracking to date.\(^{244}\) Sites to
be examined by EPA in the study include drilling sites in Colorado, Pennsylvania, Louisiana, North Dakota, and Texas. The study’s findings will undoubtedly influence the course of future federal regulation of hydraulic fracturing.

In September 2012, the U.S. Government Accountability Office issued a report that detailed the results of an inquiry into federal and state regulation of hydraulic fracturing. The study recognized the key exemptions for hydraulic fracturing activities from major environmental statutes detailed in this article, and the somewhat more comprehensive regulatory framework within the six individual states analyzed.

Additionally, the study identified challenges encountered by federal and state agencies in regulating oil and gas development from unconventional reservoirs. At the federal level, EPA reported that it is challenged by limited legal authority, the difficulty of conducting inspections, taking enforcement actions, and inadequate data on relevant matters, such as groundwater quality prior to drilling. More importantly, EPA’s role in regulating exploration and production waste is significantly limited due to the exclusion of such wastes from RCRA’s hazardous waste regulations.

At the state level, the most significant recent development came in May 2012, when the Vermont General Assembly passed, and the governor signed, a new law that completely bans hydraulic fracturing within the State. Additionally, the Ohio General Assembly passed a new law in late May 2012 “requiring natural gas drillers using hydraulic fracturing impacts to drinking water resources, stating that those findings will be released at the conclusion of the final study in 2014. The study’s findings will undoubtedly influence the course of future federal regulation of hydraulic fracturing.

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technologies to disclose in detail the volume and types of chemicals and other fluids used in their operations.\textsuperscript{252}

At the local level, on November 6th, the town of Longmont, Colorado, approximately thirty miles north of Denver, voted to amend its City Charter to ban hydraulic fracking within its borders.\textsuperscript{253} The purported ban may be short-lived, however. The State of Colorado has announced support of industry representatives’ intention to bring an action to overturn the City’s attempt at an end-run around state law that otherwise permits the practice.\textsuperscript{254}

In a pair of cases decided on the same day twenty years ago, the Colorado Supreme Court ruled against municipalities attempting to ban fracking.\textsuperscript{255} The Court held that, inasmuch as gas pools do not conform to municipal boundaries, a zoning ordinance that banned drilling within a local government’s borders would be preempted because it would conflict with the state’s interest in fostering the efficient development and production of oil and gas reserves. However, the Court also held that Colorado’s Oil and Gas Conservation Act, which does not contain an express supersede clause, does not preclude local municipalities from regulating districts within which gas drilling may occur.\textsuperscript{256}

CONCLUSION

The United States contains vast amounts of oil and natural gas in shale formations. For decades, the U.S. oil and gas industry has employed the process of hydraulic fracturing to exploit these natural resources. The process raises significant concerns about air and groundwater pollution, which has led to a polarizing, often heated public debate that continues to this day, and will likely continue for the foreseeable future.

Current U.S. federal regulation of hydraulic fracturing, and oil and gas industry extraction operations, largely consists of a string of ad hoc exemptions and little oversight. The bulk of the regulatory responsibility is given to the several states, and these regulations vary widely in their complexity and level of protection of human health and the environment.

\textsuperscript{252} Public Utilities Reports, Inc., Update on Hydraulic Fracturing 2 (2012).
\textsuperscript{256} Bowen/Edwards, 830 P.2d at 1059; Voss, 830 P.2d at 1066.
New Jersey and Vermont, for example, have recently banned hydraulic fracking.257

New research findings, proposed regulations, and allegations of groundwater contamination are released on an almost daily basis. With newly proposed federal regulations, studies being conducted by the states, the federal government, public interest NGOs, and mounting pressure from environmental groups, the state of hydraulic fracturing regulation in the U.S. is up in the air.

By comparison, moratoria and outright prohibitions have been imposed on hydraulic fracturing in Europe. In France, for example, Prime Minister Francois Fillon announced in March 2011 that "unconventional" oil shale exploration and extraction activities would not be authorized in the French territory.258 In October 2011, the French government canceled all three exploration permits on shale-gas fields after Total SA and U.S.-based Schuepbach Energy, LLC, which held the rights, maintained their intention to drill using hydraulic fracturing. In a joint statement, France's Minister of Energy, Eric Besson, and Minister of the Environment, Nathalie Kosciusko-Morizet, said that the three permits, which represent all of the country's potential shale-gas fields, had been canceled after the companies submitted a mandatory report about their drilling techniques in which they maintained plans to use hydraulic fracturing.259

Shale gas now accounts for one quarter of all U.S. gas production, and the Energy Information Administration (EIA) forecasts that this proportion will double by 2035.260 According to a study by IHS Cambridge Energy Research Associates, European production levels from unconventional gas sources, including shale, could range from sixty billion cubic meters (bcm), which is less than half of current shale gas production in North America, to 200 bcm by 2025.261 With such overwhelming natural resources, which


258. Letter of March 11, 2011 from Prime Minister Francois Fillon to the Ministers of the Environment, Interior and the Economy (Commerce).


could relieve EU gas energy dependence on Russia and Eastern Europe, Europe may soon follow the United States’ lead in the development and regulation of these vast reserves.
**Encouraging the Growth of Urban Agriculture in Trenton and Newark Through Amendments to the Zoning Codes: A Proven Approach to Addressing the Persistence of Food Deserts**

*Jim Smith*

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INTRODUCTION

The 2008 Farm Bill defines “food desert” as “an area in the United States with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower-income neighborhoods and communities.”1 In New Jersey, food deserts abound. Supermarket disinvestment from lower-income neighborhoods means twenty-five percent fewer supermarkets per capita in the State compared to the national average.2 Consequently, many city dwellers purchase most of their food from convenience and liquor stores, which generally do not sell fresh fruits and vegetables.3 Although people in general prefer eating a balanced diet, the estimated 340,000 New Jersey residents who live in food deserts simply lack access to fresh vegetables.4 This lack of access to nutritious food has its consequences: New Jersey spends $630 million each year on obesity-related disease,5 and its 18.1% incidence of obesity among lower-income children aged two to five years old is the highest in nation.6

This article looks at zoning ordinances in Newark and Trenton, where food deserts persist on a large scale in spite of recent efforts to provide greater access to affordable, nutritious food. Part I reviews the history and purpose of urban zoning laws. Part II details the negative health impacts food deserts pose and how increased access to nutritious food improves the health of urban residents. Part III examines recent scholarship, including model zoning codes and how other cities have successfully amended their zoning codes to foster the growth of urban agriculture. Part IV discusses the extent of food deserts, and the current state of urban agriculture in Trenton.

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5 THE FOOD TRUST, supra note 2, at 1.
6 Id. at 3.
and Newark. Part V analyzes the zoning ordinances currently in effect in Trenton and Newark and provides policy recommendations to spur the growth of urban agriculture. This article concludes that zoning amendments are a sensible and effective way to address the negative effects of food deserts, wherever they exist.

I. HISTORY AND PURPOSE OF ZONING REGULATIONS

A. The Emergence of Zoning as a Tool for States and Municipalities to Regulate Land Use

Zoning ordinances dictate whether a specific use of land is permitted, conditional, or prohibited. “In zoning, urban agriculture can be treated either as a district or as a use category.” Historically, since the 1926 Village of Euclid v. Ambler Realty Co. decision, the Supreme Court has upheld the police power of municipalities to regulate land use via zoning ordinances as constitutional. As a result of that landmark decision, “Euclidean” zoning, which controls how land may be used, spread across the country as the dominant form of local land use regulation.

The Euclid decision prompted the federal government to enact legislation designed to encourage widespread adoption of use-based zoning ordinances. The Advisory Committee on City Planning and Zoning (ACCPZ), formed in the Department of Commerce under then Secretary of Commerce Herbert Hoover, published two acts in the late 1920s that provided states and municipalities with the essential framework for adopting zoning and planning legislation within their jurisdictions.

The revised version of the first piece of legislation, the Standard State Zoning Enabling Act (SZEA), was published in 1926. The Act “endeavors to provide, so far as it is practicable to foresee, that proper zoning can be undertaken under it without injustice and without violating property

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12. Id. at 3–6.
The Act was a response to litigation in state courts surrounding the constitutionality of state zoning enabling acts and municipalities that had already adopted their own zoning codes. It “created a national framework that could survive scrutiny when the constitutionality of zoning came before state and federal courts.”

Formulated to promote health, safety, morals, and general welfare, the SZEAs authorized municipalities:

- to regulate and restrict the height, number of stories, and size of buildings and other structures, the percentage of lot that may be occupied, the size of yards, courts, and other open spaces, the density of population, and the location and use of buildings, structures, and land for trade, industry, residence, or other purposes.

Municipalities must make such regulations “in accordance with a comprehensive plan.” The ACCPZ specifically designed the regulations:

- to lessen congestion in the streets; to secure safety from fire, panic, and other dangers; to promote health and the general welfare; to provide adequate light and air; to prevent the overcrowding of land; to avoid undue concentration of population; to facilitate the adequate provision of transportation, water, sewerage, schools, parks, and other public requirements.

Additionally, municipal legislatures retain discretion in determining the manner that zoning regulations are implemented and enforced.

The ACCPZ published its second Model Act, the Standard City Planning Enabling Act (SCPEA), in 1928. The SCPEA recommended forming municipal planning commissions and charged them with formulating comprehensive land use plans. The Act urged municipalities to enact such plans and conform to them “in the laying out of new streets, the construction of public works and utilities, and the private development of

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15. Id.
17. Id. § 3.
18. Id.
19. Id. § 4.
Encouraging the Growth of Urban Agriculture

Although comprehensive in nature, the Act “is not meant to be slavishly followed in every word, sentence, or section, but rather to be used as a model and to be followed but with such adjustments as may be dictated by local constitutional and statutory law and legislative customs and traditions.” Planning is optional under the SCPEA, and the Act stipulated no mandatory elements of a comprehensive plan. Consequently, according to one historian, “[c]ountless cities produced lopsided plans omitting some of the essential community facilities and almost none included the full complement of utilities.” In spite of this, the influence of the Model Acts on the development of zoning legislation “cannot be ignored”: “[B]y 1930, 35 states had adopted the Standard State Zoning Enabling Act in whole or in part, and eventually all of the states adopted zoning enabling legislation, with most reflecting the influence of the Standard Act.”

Conventional Euclidean zoning codes enacted in the early 20th century are slowly yielding to New Urbanism, a movement originating in the early 1980s that spawned form-based codes. Such codes seek to create the “proper urban form” by facilitating the growth of “vibrant mix-use communities.” Form-based codes are an alternative to conventional, use-based codes, which by some accounts tend to degrade a community’s character by promoting “sprawling low-density, single-use, automobile dependent development.” The Town of Seaside, a planned community located on the Florida panhandle, embodies the principles of the burgeoning New Urbanism movement.

22. Id. at 2.
23. Knack, supra note 11, at 8.
24. Id. (quoting MEL SCOTT, AMERICAN CITY PLANNING SINCE 1890 244 (1971)).
27. Id.
29. Doris S. Goldstein, New Urbanism: Recreating Florida by Rewriting the Rules, 80 FLA. B.J. 63, 63 (Apr. 2006) (“Seaside demonstrates the principles of new urbanism: A mixture of uses and housing types with commercial uses clustered in the town center, well-designed, centrally-located parks and other civic spaces, small lot sizes with narrow frontage and the garage pushed to the rear of the lot,
B. The Range of Powers Conferred by States on Local Governments: Dillon’s Rule v. Cooley Doctrine

Most states apply Dillon’s Rule, first articulated in Iowa in Clinton v. Cedar Rapids and the Missouri River Railroad\(^{30}\) and later reaffirmed by the United States Supreme Court, to specify the narrow and constricted powers held by local governments. Dillon municipalities possess powers of governance only to the extent conferred by the state, and the state may retract these powers at any time.\(^{31}\)

New Jersey is one of ten states that have adopted the Cooley Doctrine, also known as home rule, for municipal governance.\(^{32}\) In home rule jurisdictions, certain absolute powers are delegated from state government to local municipalities; local matters are left for local control.\(^{33}\) Chief Justice Thomas J. Cooley of the Michigan Supreme Court first articulated the doctrine in 1871, holding that states cannot withdraw a municipality’s absolute right to govern local affairs.\(^{34}\) Home rule states, however, retain discretion in deciding “[t]he number, nature and duration of [municipal powers].”\(^{35}\)

Home rule “conjures an image of the ‘local’ as a relatively small-scale, geographically based community that possesses the autonomy to control its own affairs.”\(^{36}\) Home rule advocates argue that it enables local governments to respond effectively to community concerns\(^{37}\) and “ensure[s] that people can define the character of the communities in which they live.”\(^{38}\) Each home rule state differs in the amount of authority it grants to municipalities sidewalks, street trees, and a variety of other design elements intended to treat the streets as outdoor rooms and make it pedestrian-friendly.”).

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31. Id. at 475.
33. Id.
34. People ex rel. Le Roy v. Hurlbut, 24 Mich. 44, 108 (1871) (“The state may mould [sic] local institutions according to its views of policy or expediency; but local government is matter of absolute right; and the state cannot take it away. It would be the boldest mockery to speak of a city as possessing municipal liberty where the state not only shaped its government, but at discretion sent in its own agents to administer it; or to call that system one of constitutional freedom under which it should be equally admissible to allow the people full control in their local affairs, or no control at all.”).
35. Hunter v. City of Pittsburgh, 207 U.S. 161, 178 (1907) (“The number, nature and duration of the powers conferred upon these corporations and the territory over which they shall be exercised rests in the absolute discretion of the state.”).
37. Local Government Authority, supra note 32.
and the extent to which municipalities exercise the power delegated to them. Most home rule municipalities possess the zoning power. Typically, a state’s constitution or zoning enabling legislation confers the zoning power on municipalities.

C. History and Current State of Home Rule in New Jersey

Home rule for New Jersey municipalities is conveyed by statute and reinforced in its constitution. Municipalities in New Jersey are “significant, formidable entities” that possess a broad array of powers. Their powers include “the power to sue and be sued, to acquire and dispose of property, to make contracts, to tax, and to enact ordinances.”

New Jersey has a tradition of home rule dating back to the Township Act of 1798. The Act established a system of local government by officially incorporating all municipalities within the state. Most importantly, the Act established the town meeting as the mode of municipal governance. In 1875, New Jersey amended its constitution to ensure that legislation enacted concerning local governments “be liberally construed in their favor.” The amendment stipulated that municipal powers “shall include not only those granted in express terms but also those of necessary or fair implication, or incident to the powers expressly conferred, or essential thereto, and not inconsistent with or prohibited by this Constitution or by law.”

39. Local Government Authority, supra note 32.
41. Barron, supra note 36, at 2318.
42. Municipalities Given Fullest Powers N.J. STAT. ANN. § 40:42-4 (“In construing the provisions of this subtitle, all courts shall construe the same most favorably to municipalities, it being the intention to give all municipalities to which this subtitle applies the fullest and most complete powers possible over the internal affairs of such municipalities for local self-government.”).
43. N.J. CONST. art. IV, § VII ¶ 11.
44. EGENTON, supra note 40, at 1.
45. Id.
46. Township Act of 1798, N.J. Pub. L. No. 1798, 1798 N.J. Laws, 332 (“Be it enacted . . . [t]he inhabitants of every township, precinct and ward within this state be, and they hereby are constituted a body politic and corporate in law . . .”).
47. EGENTON, supra note 40, at 2.
48. N.J. CONST. art. IV, § VII ¶ 11.
49. Id.
The Township Act of 1899 amended the State’s home rule legislation by firmly rooting municipal powers in township committees. The Home Rule Act of 1917 defined the fundamental powers of New Jersey municipalities and the procedures for enacting ordinances. Finally, general dissatisfaction with local government structures employed to date resulted in the New Jersey legislature enacting the “Optional Municipal Charter Law.” This legislation sanctioned four different types of municipal government: Mayor-Council, Council-Manager, Small Municipality, or Mayor-Council-Administrator. Newark, Trenton, and many other cities across the State, operate under the Mayor-Council form of government. This form of government, a classic “strong-mayor” charter, is akin to the federal-state arrangement: “[t]he Mayor is the municipal chief executive, the council the municipal legislature.” The Mayor-Council plan stipulates that the mayor and nine members of the Municipal Council each serve four-year terms.

Legislation currently in effect confers broad powers to New Jersey municipalities. The Optional County Charter Law, enacted in 1972, characterizes municipalities as “the broad repository of local police power in terms of the right and power to legislate for the general health, safety and welfare of their residents.” Nothing in this law “shall be construed to impair or diminish or infringe on the powers and duties of municipalities under the general law of this State.” New Jersey law affirms the municipality’s right to pass regulations in the exercise of its police power:

Any municipality may make, amend, repeal, and enforce such other ordinances, regulations, rules, and by-laws not contrary to the laws of this state or of the United States, as it may deem necessary and proper for the good government, order, and protection of persons and property, and for the preservation of the public health, safety, and welfare of the municipality and its inhabitants, and as
may be necessary to carry into effect the powers, and duties conferred, and imposed by this subtitle, or by any law.\textsuperscript{59}

In 1975, New Jersey enacted the Municipal Land Use Law (MLUL), which granted municipalities the express right to enact zoning ordinances.\textsuperscript{60} Specifically, the MLUL provides a municipality’s planning board the authority to adopt a Master Plan “to guide the use of lands within the municipality in a manner which protects public health and safety and promotes the general welfare.”\textsuperscript{61} The MLUL’s general purpose is to encourage municipalities to enact smart, efficient ordinances. In particular, the MLUL envisions “municipal action to provide sufficient space in appropriate locations for a variety of agricultural, residential, recreational, commercial and industrial uses and open space.”\textsuperscript{62} The statute permits a zoning ordinance to provide for a conditional use permitting system\textsuperscript{63} and suggests what ordinances should contain.\textsuperscript{64} A “conditional use” per the MLUL:

means a use permitted in a particular zoning district only upon a showing that such use in a specified location will comply with the conditions and standards for the location or operation of such use as contained in the zoning ordinance, and upon the issuance of an authorization therefore by the planning board.\textsuperscript{65}

II. NEGATIVE IMPACTS OF FOOD DESERTS AND HOW INCREASED ACCESS TO NUTRITIOUS FOOD IMPROVES THE HEALTH OF URBAN RESIDENTS

Food deserts are a national problem. In densely populated areas, seven percent of the zip codes do not have a grocery store or supermarket, and fifty-three percent do not have a chain supermarket.\textsuperscript{66} Of all households in the United States, 2.2% live more than a mile from a supermarket and do

\begin{footnotesize}
\begin{enumerate}
\item Id. § 40:48-2.
\item Id. § 40:55D-1.
\item Id. § 40:55D-28.
\item Id. § 40:55D-2.
\item Id. § 40:55D-67.
\item Id. § 40:55D-65.
\item Id. § 40:55D-3.
\item INST. OF MED. AND NAT’L RES. COUNCIL, PUBLIC HEALTH EFFECTS OF FOOD DESERTS, 12 (2009).
\end{enumerate}
\end{footnotesize}
not have access to a vehicle. Furthermore, 23.5 million people live in low-income areas with no supermarket within a mile. Black and Hispanic populations have half and one-third as much access to chain supermarkets as Caucasians and non-Hispanics, respectively.

Food deserts predominate in urban and rural low-income areas. Research confirms that people living in these areas may be more likely to suffer from diabetes and premature death due to diabetes, cardiovascular disease, and obesity. Food insecure populations are more likely to have an increased incidence of obesity. The increased availability of foods lacking in nutrition and the dearth of nutritional foods available for purchase in food deserts are major causes of this urban health crisis. Diet-related diseases are more prevalent in places with limited access to healthy food than neighborhoods in which residents have easy access to nutritious foods like fresh fruits and vegetables.

Experts argue that the solution to food deserts and the accompanying health problems that afflict their residents lies in a multifaceted,
One expert, Joel Gittelsohn of Johns Hopkins University, argues for a "trifecta" approach to improve community eating habits and nutritional environments: "increase availability, reduce price, and promote healthier choices." Merely improving access to nutritious food, some experts say, will not by itself alleviate the rampant obesity problem in food deserts. Admittedly, improving access to healthy food should progress hand-in-hand with other initiatives to encourage healthy eating. Until food desert residents have access to healthy food in their neighborhoods, however, they do not have the choice to purchase fresh produce in lieu of candy and other processed foods with little to no nutritional benefit. Easy access to healthy food is the initial foundation required for further progress.

Thus, changing the food environment in food deserts by increasing the availability of affordable and nutritious foods "is a practical way, perhaps the only practical way, to address the obesity epidemic." Urban agriculture is a proven method of addressing the health problems that plague residents of fresh food deserts. It increases access to fresh produce and "promotes awareness of healthy foods and more nutritious eating habits." In Philadelphia, for example, The Food Trust has opened up many farmers' markets throughout the city, which has resulted in increased fruit and vegetable intake among customers.

Urban agriculture has price and nutritional benefits for city dwellers, too. Food grown in the city does not have to be transported in, resulting in lower transportation costs and lower food costs for the urban poor by creating space to grow produce that

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75. Steven Yaccino, In Chicago, Michelle Obama Takes On 'Food Deserts,' THE CAUCUS (Oct. 25, 2011), http://thecaucus.blogs.nytimes.com/2011/10/25/in-chicago-michelle-obama-takes-on-food-deserts/(including statement by Mari Gallagher, market research consultant that "[t]here’s not one single reason we have food deserts, and not one single solution"); Gina Kolata, Studies Question the Pairing of Food Deserts and Obesity, N.Y. TIMES, (Apr. 17, 2012), http://www.nytimes.com/2012/04/18/health/research/pairing-of-food-deserts-and-obesity-challenged-in-studies.html (highlighting the opinion of Justin DeJong, spokesperson for Department of Agriculture, who argues fighting obesity in food deserts "requires 'a comprehensive response'" and that "the federal effort . . . includes not just improving access to healthy foods but also improving food in schools, increasing physical education time, and educating people on the importance of healthy diets").

76. INST. OF MED. AND NAT’L RES. COUNCIL, supra note 66, at 46.

77. Kolata, supra note 75.

78. INST. OF MED. AND NAT’L RES. COUNCIL, supra note 66, at 46.


80. INST. OF MED. AND NAT’L RES. COUNCIL, supra note 66, at 62.

81. Alexandra Dapolito Dunn, Siting Green Infrastructure: Legal and Policy Solution to Alleviate Urban Poverty and Promote Healthy Communities, 37 B.C. ENVTL. AFF. L. REV. 41, 52 (2010) ("Green infrastructure can lower food costs for the urban poor by creating space to grow produce that..."
higher nutritional values and quality.\textsuperscript{82} “[I]t has been shown that a five to ten day transportation and storage lag between production and consumption leads to losses of 30-50% in some nutritional constituents.”\textsuperscript{83} Finally, “[d]irect marketing improves the producer-consumer relationship and maximizes opportunities and interest in increased consumption of fresh fruit and vegetables.”\textsuperscript{84}

III. HOW SCHOLARSHIP AND CASE STUDIES INFORM THE PROCESS FOR AMENDING ZONING CODES TO BETTER FACILITATE URBAN AGRICULTURE

A. APA’s Growing Smart Project

The American Planning Association published “The Growing Smart Legislative Guidebook: Model Statutes for Planning and the Management of Change” in January 2002.\textsuperscript{85} In charging that the SZEA and SCPEA “are shopworn and inadequate for the job at hand,”\textsuperscript{86} the Guidebook “detail[s] best practices to guide state legislatures in their efforts to modernize state planning and zoning enabling acts.”\textsuperscript{87} The Guidebook is “intended to provide governors, state legislators, state legislative research bureaus, local elected and appointed officials, planners, citizens, and advocates for statutory change with ideas, principles, methods, procedures, phraseology, and alternative legislative approaches drawn from various states, regions, and local governments across the country.”\textsuperscript{88} It asserts that land use policy has changed to recognize “vacant, developable land as having competing social values—it can be used for the construction of affordable housing or can supply an urban center. The urban poor pay more for their food, particularly produce, than suburban or rural residents.”.\textsuperscript{89}

\textsuperscript{82} Susan A. Schneider, A Reconsideration of Agricultural Law: A Call for the Law of Food, Farming, and Sustainability, 34 WM. & MARY ENVTL. L. & POL’Y REV. 935, 954 (2010) (“Nutrition is lost in transit, and crops are selected for transportability rather than nutrition or taste.”).


\textsuperscript{84} Id.


\textsuperscript{86} AM. PLANNING ASS’N, GROWING SMART LEGISLATIVE GUIDEBOOK: MODEL STATUTES FOR PLANNING AND THE MANAGEMENT OF CHANGE xxx (Stuart Meck ed., 2002).

\textsuperscript{87} Salkin, supra note 25, at 126.

\textsuperscript{88} AM. PLANNING ASS’N, supra note 86, at xli.
for the continuation of agriculture.”89 To encourage urban agriculture activities within cities, the Guidebook urges states to pass agricultural enabling statutes, which allow municipalities to make zoning amendments establishing agricultural districts, “where commercial agriculture is encouraged and protected.”90

B. Seeding the City: Land Use Policies to Promote Urban Agriculture

The National Policy & Legal Analysis Network to Prevent Childhood Obesity (NPLAN), a nonprofit organization formed under Public Health Law & Policy (PHLP), published in October 2011 a comprehensive guide for city planners interested in enacting land use policies aimed at promoting urban agriculture.91 Although the Guide offers a “Model Comprehensive Plan Language for Urban Agriculture” and a “Model Zoning Ordinance for Urban Agriculture,” the underlying message of Seeding the City: Land Use Policies to Promote Urban Agriculture is that “there is no one-size-fits-all urban agricultural use land policy.”92 Cities, in crafting their land use policies, should take into account factors like suitability and availability of land for agriculture, the level of interest of urban residents, and population density.93 In addition, legislators must consider what forms of agriculture to allow and where to allow them within the city; whether to classify urban agriculture as a permitted use (i.e. “as-of-right” use) or a conditional use (i.e. urban farmers must obtain approval); what operating standards to impose on urban farmers that will ensure community harmony and compatibility with neighbors; and what uses incidental to farming to allow.94

The Guide suggests adhering to EPA guidelines for evaluating urban parcels for soil contamination.95 The EPA process, also known as “All Appropriate Inquiries” (AAI), requires “conducting due diligence or a Phase I Environmental Site Assessment to determine prior uses and

89. Id. at xxix.
90. Id. at 14-1.
92. Id. at 5.
93. Id.
94. Id. at 6–8.
95. Id. at 8.
ownership of a property and assess conditions at the property that may be indicative of releases or threatened releases of hazardous substances at, on, in, or to the property.”

Only an “Environmental Professional,” defined in 40 C.F.R. § 312.10, may perform the AAI investigation. EPA’s “Interim Guidelines for Safe Gardening Practices” recommend researching a site’s history including its past uses and pursuing various options for testing a site for contamination and cleanup, using “existing residential cleanup standards . . . as a benchmark for safe gardening.”

A city may take steps to ensure that land remains undeveloped and available for agriculture by designating areas as “open space districts.” These districts “enhance the protection of land as open or green space, because once the district is established, a change of use requires a vote by the local legislative body” or the public. In other words, a city that designates open space districts in its code provides community and market gardeners with a certain peace of mind that they can continue to farm their plots over the long term. Long-term security over land is necessary for the growth of urban agriculture.

The most helpful section of the Guide for municipal legislators seeking to implement farmer-friendly adjustments to zoning codes is the “Model Comprehensive Plan Language for Urban Agriculture.” The Guide outlines three goals for such legislators. First, land use policy should “protect existing and establish new urban agriculture sites.” This includes removing barriers to gardening in residential districts, adopting regulations that designate community gardens as a permitted use and urban farms as a conditional use in appropriate locations, and “prioritiz[ing] the development of new urban agriculture sites in low-income and underserved neighborhoods.”

Second, the Guide recommends that opportunities for urban agriculture accompany any new development. Third, cities should form food policy councils that “promote urban agriculture through ongoing

97. Id.
99. WOOTEN & ACKERMAN, supra note 91, at 10.
100. Id.
101. Id. at 17.
102. Id.
103. Id. at 17–18.
104. Id. at 18.
programming and partnerships.” The guide concludes by emphasizing the importance of how a code defines different types of agriculture. These definitions “will guide decisions about what types of agriculture are appropriate in different areas within the community.”

C. Case Studies

1. Seattle, Washington

2010 was the Year of Urban Agriculture in Seattle, Washington. The City passed amendments to its zoning ordinance allowing urban farming activities in almost all zoning districts. The amendments were enacted following a period of research and deliberation. In June 2010, Seattle’s Department of Planning and Development released a report summarizing its recommendations with regard to amending the City’s zoning code to enhance the local food system. The report lists numerous benefits of local food production: it ensures fresh food for local residents with higher nutrient content compared with food shipped over large distances; it enhances community relations, especially farmer-consumer relationships; it reduces poverty by allowing residents to sell crops cultivated on unused urban plots; and it increases the City’s degree of self-sufficiency. The report asserts that removing land use code barriers would open up a “tremendous opportunity for urban agriculture in residential yards, commercial/industrial rooftops, and in open space.”

In August 2010, Seattle’s City Council adopted Ordinance 123378, and it took effect a month later. Taking the new amendments into consideration, Seattle’s code represents one of the Country’s most progressive zoning ordinances in terms of facilitating urban agriculture. In general, the legislation permits farmers’ markets in wide areas of the City

105. Id. at 20.
106. Id. at 20.
109. Id. at 5.
110. Id. at 4.
and residents to sell the food that they grow on their property.\textsuperscript{112} Urban farms, or those operations growing plants on-site for sale, are permitted in all zones.\textsuperscript{113} The code does not require a permit for urban farms with up to 4,000 square feet of planting area and accessory to a residential use.\textsuperscript{114} Entrepreneurs seeking to start urban farms in residential zones must apply for a conditional use permit.\textsuperscript{115} In most zones, rooftop greenhouses can exceed height restrictions by up to fifteen feet, “if the greenhouse is dedicated to food production.”\textsuperscript{116} Further, the changes to the code are not limited solely to vegetable production; the code now permits eight chickens per lot as opposed to three under the old code.\textsuperscript{117}

2. Cleveland, Ohio

In 2007, Cleveland adopted an amendment to its code establishing an Urban Garden District.\textsuperscript{118} The main permitted uses within this district are community and market gardens, including the sale of crops grown on the sites.\textsuperscript{119} Permitted secondary uses are greenhouses, hoophouses, cold-frames, open space intended for use as a garden, fences, signs, benches, bike racks, raised beds, compost bins, seasonal farm stands, garden art, rain barrels, chicken coops, beehives, and certain buildings used for agricultural purposes.\textsuperscript{120} This amendment spurred an explosion of urban gardening and what many believe is Cleveland’s “biggest proliferation of big-lot gardens since the Victory Garden days of World War II.”\textsuperscript{121}

Even greater change was on the way. In October 2010, the Cleveland City Council passed more amendments facilitating urban gardening, this time changing urban agriculture on vacant residential lots from an accessory to a principal use.\textsuperscript{122} In addition, the City’s Department of

\textsuperscript{112} Id.
\textsuperscript{113} Seattle, Wash., supra note 107, at 15.
\textsuperscript{114} Id. at 12.
\textsuperscript{115} Wooten & Ackerman, supra note 91, at 9 (citing Seattle, Wash. Mun. Code § 23.44.051B(1) (2010)).
\textsuperscript{116} Seattle, Wash., supra note 107, at 21.
\textsuperscript{118} Cleveland, Ohio, Code of Ordinances § 336.01 (2007).
\textsuperscript{119} Id. § 336.03.
\textsuperscript{120} Id. § 336.04.
\textsuperscript{121} Marty Sterpka, Cleveland’s For-Profit Urban Gardens are Growing, Cleveland.com (July 6, 2009), http://blog.cleveland.com/metro/2009/07/clevelands_forprofit_urban_gard.html.
\textsuperscript{122} Cleveland, Ohio, Code of Ordinances §§ 337.02, 337.23-25 (2007); Morgan Taggart, City Council Changes Residential Zoning to Support Urban Agriculture, Cleveland–Cuyahoga
Economic Development sponsors “Gardening for Greenbacks,” a program designed to ensure city residents have access to fresh food. Grants up to $3,000 are available to eligible urban farmers for the purchase of tools, irrigation equipment, and greenhouses. All of this makes Cleveland’s urban agriculture policy one of the most progressive in the country. Greater Cleveland has over 225 community gardens and more farmers’ markets per capita than any other metro area in the country.  

3. Madison, Wisconsin  

After four years of work, the Madison Common Council adopted a new zoning code in March 2011. Similar to Cleveland’s code, it establishes a new Urban Agricultural District “to ensure that urban garden and farm areas are appropriately located and protected to meet needs for local food production, and to enhance community health, community education, garden-related job training, natural resource protection, preservation of green space, and community enjoyment.” Permitted uses within the Urban Agriculture District include: market and community gardens; composting/vermiculture facilities; outdoor storage; and solar or wind energy devices. The new code seeks to achieve a goal of “[m]aintain[ing] existing agricultural operations in the City and encourag[ing] new, smaller farming operations.” In keeping with this goal, the code should resolve...
some of the problems that formerly faced urban farmers, such as restrictions on the size and location of hoophouses.\textsuperscript{130} Growing Power, perhaps the best-known urban farm in the country, has proposed building a vertical farm in the middle of Madison.\textsuperscript{131} The plans include building a 34,000 square-foot, five-story farm and educational facility.\textsuperscript{132} It will be the first facility of its kind in the country.\textsuperscript{133} Although the financing plan has not yet been put into place, the vertical farm received zoning approval in December 2010.\textsuperscript{134} Further indication of Madison’s enthusiasm for the growth of agriculture within its city is the Badger School for Urban Agriculture and Community. Although still in the project stage, the yet-to-be-constructed charter school will be “geared toward urban agriculture, nutrition and the environment.”\textsuperscript{135} Community gardens, gracing the exterior areas of the school, will serve the local community by providing fresh produce to its residents.\textsuperscript{136}

IV. FOOD DESERTS AND THE CURRENT STATE OF URBAN AGRICULTURE IN TRENTON AND NEWARK

A. Food Deserts in Trenton and Newark

The United States Department of Agriculture (USDA) conducted extensive research to qualify, quantify, and publicize the food desert problem in America. To that end, it recently released an “[i]nternet-based mapping tool that pinpoints the location of ‘food deserts’ around the country and provides data on population characteristics of census tracts

\begin{itemize}
  \item \textsuperscript{130} See, e.g., Matthew DeFour, ‘Hoop Houses’ Draw Urban Farmers in Madison and Critics, WIS. STATE J. (Sept. 30, 2009), http://host.madison.com/wsj/news/local/environment/article_ec30c9aa-ae08-11de-aba5-001cc4c002e0.html.
  \item \textsuperscript{132} Id.
  \item \textsuperscript{133} Growing Power Vertical Farm Receives City Approval, THE KUBALA WASHTKO ARCHITECTS, INC. (Jan. 27, 2011), http://www.tkwa.com/blog/growing-power-vertical-farm-receives-city-approval.
  \item \textsuperscript{134} Id.
  \item \textsuperscript{136} Michael Levenston, Badger School for Urban Agriculture and Community, CITY FARMER NEWS (Jan. 13, 2010), http://www.cityfarmer.info/2010/01/13/badger-school-for-urban-agriculture-and-community.
\end{itemize}
where residents have limited access to affordable and nutritious foods.”

The tool defines “food desert” as a low-income census tract in which at least one-third of the population lives greater than a mile from a supermarket. The research reveals shocking statistics: over 6,500 food deserts exist in the continental United States, and approximately 13.6 million people, mostly urban residents, have low access to a supermarket.

According to USDA’s research criteria, Trenton, a city of approximately 85,000 residents, has four food deserts with a total population of 18,588 people. Specifically, 4,800 of those residents have low access to a supermarket. Newark, a city of approximately 277,000 residents, has one food desert with a population of 2,471 people. All of those people have low access to a supermarket.

Although these numbers are relatively insignificant, they do not accurately characterize the food access problem in Trenton and Newark. Even though certain areas of Trenton and Newark do not fall under the USDA’s definition of “food desert,” it is clear that this problem is more severe than the USDA lets on. A study by The Reinvestment Fund, a Philadelphia nonprofit organization, delineates vast areas of Trenton and Newark where access to supermarkets is limited. Both cities boast substantially less supermarkets per capita than the national average.

Countless articles and research underscore the almost-ubiquitous presence

142. USDA Food Desert Locator, USDA ERS (July 6, 2012), http://www.ers.usda.gov/data-products/food-desert-locator.aspx (follow “Enter the Map” hyperlink; click “Find Address” hyperlink; then search “Trenton, NJ” and “Newark, NJ”; click food desert areas to see statistics); see Appendix A (including comprehensive statistical breakdown).
144. THE FOOD TRUST, supra note 2, at 5 (stating that Trenton and Newark have thirty-one percent and seventy-seven percent of the United States average supermarkets per capita, respectively).
of food deserts in Trenton and Newark. Recent positive developments (like the first opening of a full-service supermarket in Newark in over twenty years) are undoubtedly exciting and indicate that progress is being made. Still, far too many residents of Trenton and Newark lack convenient access to fresh food, particularly fruits and vegetables.

B. Urban Agriculture in Trenton and Newark

Recent trends and legislative developments suggest interest in widespread access to fresh, healthy food in New Jersey is on the rise. According to the state Department of Agriculture, the number of seasonal farmers’ markets increased from thirty-five in 2001 to 148 in 2011. Main Street New Jersey, a state program established in 1989, facilitated this large increase by “provid[ing] technical support to towns and farmers in operating a farmers’ market in downtown districts.” In addition, New Jersey Governor Chris Christie has recently signed two pieces of legislation that specifically address food deserts in cities like Trenton and Newark.

The first act, signed by the Governor in March 2011, “will allow nonprofit corporations and associations located in [Trenton and Newark, among other New Jersey cities] to transform vacant properties into gardens for growing fruits and vegetables.” Nonprofit farming practices on previously vacant property, and the sale of the produce grown on that land, are “considered a public purpose for which exemption from property taxation is warranted.” The Act presents an opportunity for

145 See, e.g., Steven Gray, Can America’s Urban Food Deserts Bloom?, TIME (May 26, 2009), http://www.time.com/time/nation/article/0,8599,1900947,00.html (“For years, major supermarket chains have been criticized for abandoning densely populated, largely black and Latino communities in cities like Detroit, Los Angeles, Memphis and Newark, N.J.—contributing to what many experts call food deserts.”); Jarrett Kerbel, Trenton Fresh: New Farmers’ Market to Open June 12 in East Trenton, PRINCETON ONLINE (June, 2, 2010) (“The capital of the Garden State is a food desert.”), http://www.princetonol.com/summerfare/polAnnouncements.cfm?doc_id=2951; JAMES BENNETT, ET AL., A COMMUNITY FOOD ASSESSMENT OF TRENTON, NEW JERSEY 5 (2005), available at http://policy.rutgers.edu/academics/projects/studios/trenton05.pdf (“Overall, we found that there are few healthy food options in low-income neighborhoods.”).


148 Id.


150 Id.
“municipalities and non-profit organizations . . . to lower the cost of urban agriculture projects by making public land available, tax-free.” The Act also stipulates that any proceeds from the sale of produce are used only for nonprofit purposes. These proceeds represent “a source of funding for non-profits to sustainably manage urban agriculture projects and contribute to the stream of fresh fruits and vegetables in urban areas of New Jersey.”

In January 2012, the Governor signed another act, the New Jersey Fresh Mobiles Pilot Program, which also has great potential to ease New Jersey’s food desert crisis. The legislation “authorizes the Department of Agriculture to establish a mobile farmers’ market pilot program to be conducted in one or more municipalities . . . in which residents are unable to obtain adequate access to nutritious foods.” The program operates by transporting fresh, local produce into those municipalities that agree to partake in the program for direct sale to residents. The legislation will also benefit struggling New Jersey farmers by opening up new urban markets.

Not all legislative efforts to address food deserts on a state-wide basis, however, have succeeded. In January 2012, Governor Christie pocket-vetoed the Fresh Food Access Act. If signed into law, the legislation would have “provide[d] loan and grant funds to assist businesses in providing fresh and healthy foods in areas of the State where there is a demonstrated lack of availability of such foods.” Additionally, the Fresh Food Access Act would have “specifically target[ed] areas where

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151. Glickman, supra note 79, at 84.
152. Id.
153. Id.
156. Id.
infrastructure costs and credit needs are often unmet by conventional financing institutions.”

At the city level, Trenton has seen an expansion of urban agriculture. Small-scale community gardening “is a strategy that many people employ to cope with poverty and its attendant health and social problems.” Although community gardens in Trenton only occupy 1.4 acres of city land, they are bountiful. Gardeners reaped over 22,000 pounds of summer crops in 2009 on twenty-nine gardens. Isles, Inc., a nonprofit community development organization, runs a program that facilitates the growth of community gardening in Trenton. The program “teaches gardeners how to grow food and provides materials for raised beds, seeds and organic pest control; volunteer help; and tools and equipment to prepare the soil.” Isles supports the vast majority of gardens in Trenton, which supply thousands of people with fresh produce.

One of two farmers’ markets in Trenton is Capital City Farmers’ Market. It is open once a week for three hours from mid-July to late-September. It is located near the state government complex, and targets state government workers. The other farmers’ market is Trenton Farmers’ Market, located in North Trenton in Lawrence Township near many other supermarkets. The market is open year round and sells fresh fruit and vegetables, meat products, and baked goods. There are also numerous roadside stands selling fresh produce in areas surrounding Trenton, but only two roadside stands are in the city itself. The two inner-city stands are run by the Rutgers Youth Farmstand Program, and are open three days per week during the summer.

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161. Id. at 32.
162. Id.
164. BENNETT, supra note 145, at 21.
166. BENNETT, supra note 145, at 3.
167. Id. at 21.
169. BENNETT, supra note 145, at 23.
170. Id.
Like Trenton, Newark has in recent years experienced something of an urban farming revolution. Garden State Urban Farms (GSUF), also known as Brick City Urban Farms, is the best-known urban farming operation in Newark. This not-for-profit organization has transformed previously vacant lots into efficient urban farms by employing the Small Plot Intensive Farming, or “SPIN,” technique. GSUF successfully uses Earthboxes, “aboveground plastic containers that self-water and contain all waste and nutrients from the plants, completely preventing agricultural runoff.” Earthboxes circumvent the problem of soil contamination.

GSUF also operates a market once a week at Newark Beth Israel Medical Center. Another urban farm, the Lincoln Park Community Farm, was launched in 2010. For twenty dollars a week, Newark residents can purchase a weekly share in the CSA and receive a supply of fresh vegetables grown on the farm. Production on the farm has been suspended for the 2012 season due to construction.

Greater Newark Conservancy, an environmental conservation organization, has assisted residents in establishing over twenty farms on vacant, city-owned lots. The Conservancy helps Greening Clubs lease vacant lots from the City of Newark, provides assistance in garden design, helps residents acquire materials to renovate the lots, lends tools for garden cleanup, and assists with garden construction. The Conservancy’s work to improve access to fresh produce cannot be understated.

Emblematic of the increased investment in and growth of urban agriculture in Newark is EcoVeggies, “a hydroponic/aeroponic farm that

173. Id.
will grow high quality, pesticide free vegetables and herbs in eco-friendly greenhouses.\footnote{Urban Farm Coming Soon to Newark, ECOVEGGIES, http://ecoveggies.com (last visited Sept. 28, 2012).} Further reflective of Newark’s increased emphasis on agricultural sustainability is the planned Newark Vertical Farm,\footnote{Newark Vertical Farm, WEBER THOMPSON, http://www.weberthompson.com/newark-vertical-farm.html (last visited Sept. 28, 2012).} which, if completed, will house a vertical greenhouse and several research laboratories.\footnote{Ariel Schwartz, Newark, New Jersey: Farming Mecca, FAST COMPANY (Sept. 20, 2010), http://www.fastcompany.com/1690170/newark-new-jersey-farming-mecca.} The major stumbling block for this ambitions project is financing, as “nothing will be official until VFT [Vertical Farms Technology, the company in charge of development for the project] can put a tidy business plan on [Deputy Mayor for Economic Development Stefan] Pryor’s desk.”\footnote{It’s Happening in Newark, THE VERTICAL FARM BLOG (May 17, 2010), http://verticalfarmblog.blogspot.com/2010/05/its-happening-in-newark.html.}

Thus, urban agriculture is gaining a foothold in Newark and Trenton, just like it is in many if not most other major American cities. The problem is that many Newark and Trenton residents still lack adequate access to fresh vegetables. Fully addressing this access problem means specific action from legislators, as outlined below.

V. FOOD POLICY RECOMMENDATIONS

A. Revising the Codes

While investment in urban agriculture ventures like vertical farms is slowly increasing, such investment is not robust enough to be the major catalyst for increasing residents’ access to fresh produce in Trenton and Newark. The major thrust for change must come from government action. “[P]lanners interested in urban agriculture can do valuable work by reviewing and redesigning ordinances related to urban agriculture.”\footnote{Mukherji, supra note 7.}

Pursuant to the MLUL, Trenton adopted its zoning ordinance with the ultimate goal of “promoting the public health, safety, morals and general welfare.”\footnote{Mukherji, supra note 7.} The Planning Board retains the authority to grant conditional use approval.\footnote{Id. § 315-20.} Trenton’s Zoning Board of Adjustment hears appeals, interprets the zoning ordinance, grants bulk variances, and issues permits.\footnote{Id. § 315-30.}
The City’s zoning ordinance contains no express provisions regarding urban agriculture. One provision related to gardening is a restriction on the location and use of greenhouses in residential zones.\(^{188}\)

To bring Trenton’s zoning code up-to-date with the more progressive codes will require significant amendments. Trenton must implement a set of urban agriculture regulations that remove all major barriers to gardening and urban farming in areas of the City deemed appropriate for such activities. Pursuant to Seeding the City, the code should designate community gardens as a permitted use, and urban farming operations as a conditional use. The use of vacant city-owned lots for farming should be encouraged as a way to green the City and provide more opportunities for residents to access nutritious food.\(^{189}\) In the same vein, the code should also facilitate the widespread establishment and operation of farmers’ markets, particularly in underserved, low-income areas. As in Seattle, greenhouses should be permitted to operate on rooftops.

Newark’s zoning ordinance permits “community gardens” in all residential districts, three out of four business districts, and two out of three industrial districts.\(^{190}\) The ordinance does not define “community gardens,” and there is no other mention of urban agriculture. The City’s Land Use Plan is a set of recommendations in place for codification into city zoning law by 2012.\(^{191}\) It stipulates four distinct categories of land use and twenty-four separate designations. In spite of the desire to “guide positive change” in Newark,\(^{192}\) the Plan does not mention urban agriculture at all.

The Plan seeks to amend Newark’s zoning code to reflect the view that Newark’s numerous vacant lots are “opportunities for repopulating and rebuilding neighborhoods and communities with new housing, industries, offices, shops, recreational and other community facilities.”\(^{193}\) Although there are many abandoned lots, most lack open space, or are

\(^{188}\) Id. § 315-233.

\(^{189}\) Glickman, supra note 79, at 83 (“Trenton has a plethora of vacant lots, which the city can make available to interested community groups.”).


\(^{193}\) Id. at 151.
environmentally contaminated. This does not mean, however, that they are unsuitable for urban farming operations, as demonstrated by the success of vertical farming, rooftop gardens, and GSUF’s use of EarthBoxes. Although the current ordinance allows community gardens in most districts, these are generally smaller-scale operations. The Land Use Plan should incorporate elements of Seattle’s code, including: permitting farmers’ markets in more areas of the City, allowing residents to sell the food they grow on their own property, allowing greenhouses to exceed maximum height requirements, and designating urban agriculture as a permitted use, particularly in the neighborhoods where residents are most strapped for access to fresh produce. As recommended in Seeding the City, Newark’s Plan should place special emphasis on developing urban agriculture on vacant lots in its low-income food deserts.

B. Forming Urban Agricultural Districts

Another legislative option to facilitate the growth of urban agriculture in Trenton and Newark is to create districts devoted to open space and agricultural use. New Jersey has already passed an agricultural district enabling statute titled “Agriculture Retention and Development Act.” The statute allows counties to establish Agriculture Development Boards, which may recommend to the county planning board that certain lands be designated as agricultural development areas. The relevant municipal zoning ordinance must first classify agriculture as a permitted use on the lands proposed to be set aside for the agricultural district. Newark is located in Essex County, which has not formed an agriculture development board. The county must take steps to form such a board in order to assess whether designating a particular area of Newark as an agricultural district is prudent. Trenton, on the other hand, lies under the authority of the Mercer County Board of Agriculture. Once Trenton’s zoning code designates agriculture as a permitted use, the Board should take steps to identify and

196. Id. §§ 4:1C-14,18.
197. Id. § 4:1C-18(a).
recommend a site in Trenton to set aside for urban agriculture and open space. Thus, the cities’ planning boards should work together with their county department counterparts to assess the viability of establishing urban agriculture zoning districts. The path to creating such districts in urban areas is well-worn, as demonstrated in Cleveland and Madison.

C. Utilizing Charter Schools

Trenton and Newark should establish agriculture programs at their charter schools as another way to bring fresh produce into their food deserts. Charter schools in these cities can emulate the planned Badger School for Urban Agriculture and Community in Madison. In the least, Trenton and Newark should push to implement an urban agriculture element into the curriculums of charter schools, and have students run gardens that serve the local community. The EcoSpaces program at St. Phillip’s Academy in Newark is a great example of the direction charter schools should take in fostering urban agricultural and sustainability education. Students in kindergarten through eighth grade plant, cultivate, and harvest a rooftop garden; in doing so, students learn the value of fresh, nutritious food and what it takes to run a small-scale gardening operation.\(^\text{200}\)

D. Creating Food Policy Councils

Food policy councils, enacted in thirty-five jurisdictions, “work to strengthen local and regional food systems.”\(^\text{201}\) “Food Policy Councils bring together stakeholders from diverse food-related sectors to examine how the food system is operating and to develop recommendations on how to improve it.”\(^\text{202}\) There are many examples of how Food Policy Councils effect positive change in local food policy. These include “mapping and publicizing local food resources; creating new transit routes to connect underserved areas with full-service grocery stores; persuading government agencies to purchase from local farmers; and organizing community

\(^\text{200}\) Rooftop Garden, St. PHILLIP’S ACADEMY, http://web2.stphilipsacademy.org/content/Rooftop_Garden (last visited Sept. 30, 2012); see also http://web2.stphilipsacademy.org/sites/default/files/pan/garden.html (providing a panoramic view of the rooftop garden).


gardens and farmers' markets." Over 100 Food Policy Councils throughout the country are performing invaluable work to ensure everyone has access to fresh produce. Each city should pass legislation to provide for such councils.

CONCLUSION

Trenton and Newark must amend their zoning codes to foster an environment conducive to the growth of urban agriculture and protective of existing farming ventures. Food policy is constantly progressing, and these cities face falling even further behind the curve, lest their policymakers take action. Many cities across America have laid the foundation for such changes, so Trenton and Newark do not have to engage in experimental pioneering efforts to bring easy access to healthy food for their underserved neighborhoods. Zoning amendments specifically tailored to the situation in each city is a proven approach to address the persistence of food deserts in two of the Garden State’s largest and most recognizable urban areas.

203. Id.
204. Id.
## APPENDIX A

<table>
<thead>
<tr>
<th></th>
<th>Newark</th>
<th>Trenton 1</th>
<th>Trenton 2</th>
<th>Trenton 3</th>
<th>Trenton 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population</td>
<td>2,471</td>
<td>4,032</td>
<td>4,833</td>
<td>6,199</td>
<td>3,524</td>
</tr>
<tr>
<td>Number of people with low access (percentage of total population)</td>
<td>2,471 (100%)</td>
<td>1,267 (31.4%)</td>
<td>1,885 (39%)</td>
<td>525 (8.5%)</td>
<td>1123 (31.9%)</td>
</tr>
<tr>
<td>Number of low income people with low access (percentage of total population)</td>
<td>454 (18.3%)</td>
<td>101 (2.5%)</td>
<td>117 (2.4%)</td>
<td>36 (0.6%)</td>
<td>102 (2.9%)</td>
</tr>
<tr>
<td>Number of children age 0-17 with low access (percentage of total child population)</td>
<td>498 (20.2%)</td>
<td>368 (9.1%)</td>
<td>453 (9.4%)</td>
<td>115 (1.9%)</td>
<td>270 (7.7%)</td>
</tr>
<tr>
<td>Number of people age 65+ with low access (percentage of total senior population)</td>
<td>232 (9.4%)</td>
<td>73 (1.8%)</td>
<td>239 (5%)</td>
<td>98 (1.6%)</td>
<td>187 (5.3%)</td>
</tr>
</tbody>
</table>
WHY CONGRESS SHOULD CLEAN UP THE BANKRUPTCY CODE TO RENDER ENVIRONMENTAL CLEANUP ORDERS INTO CLAIMS

Daniel Belzil

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INTRODUCTION

The current judicially created legal test for when an environmental cleanup order becomes a claim in bankruptcy fails to give businesses and governments clear legal guidance, and often saddles government agencies with debtors’ environmental obligations. Accordingly, this Note proposes to amend the Bankruptcy Code to convert environmental cleanup orders into administrative priority claims in bankruptcy court.

Businesses incur various obligations during the course of their activities. These obligations stem from contracts, tort claims, the tax code, and environmental regulations, among other things. Solvent businesses ordinarily satisfy these obligations in full. By definition, an insolvent business cannot satisfy all of these obligations. Insolvent businesses therefore face a choice of which conflicting obligations to satisfy and in what order.

Bankruptcy solves this problem. Bankruptcy provides a forum wherein a debtor’s numerous creditors can collect on their claims according to their respective priority of right. For debtors who file for liquidation under Chapter 7, bankruptcy serves the substantive goal of maximizing creditor recovery. For debtors who petition for reorganization under Chapter 11, however, bankruptcy serves an additional purpose. Unlike Chapter 7 liquidation, Chapter 11 reorganization grants debtors a “fresh start,” allowing the insolvent debtor to reemerge and start anew. Thus, the debtor can continue to operate so that the community accrues benefits from the business for as long as possible. These benefits include: the wellbeing of employees who depend on the debtor, the continued revenue flow to the debtor’s suppliers, and the convenience for the debtor’s longtime

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* Daniel Belzil is a 2013 J.D. candidate at Vermont Law School.
2. Id.
3. Id.
4. Id.
5. Id.
8. Id. at 4.
9. Id. at 4.
customers. The fresh start policy therefore recognizes that businesses serve a vital function in an interconnected community.

The modern Bankruptcy Code promotes the fresh start policy by allowing the debtor to shed as many cumbersome obligations, or “debts,” as possible. The Code accomplishes this goal by defining “debt” broadly as a “liability on a claim.” The Code even considers an equitable remedy—such as an environmental injunction—a “claim” as long as it “gives rise to a right of payment” for breach of performance. The right of payment for a breach of performance may even be contingent, disputed, unmatured, or not yet reduced to judgment.

The end result of a Chapter 11 reorganization is to restructure all prepetition debts. This involves a process of deciding which claimants get paid and how much. Some claimants receive mere pennies on the dollar. Some claimants, who would enjoy the right to full payment from the debtor outside of bankruptcy, lose those rights when the debtor receives a discharge. The substantive bankruptcy policy of giving the debtor a fresh start can therefore abrogate rights that exist outside of bankruptcy.

Nowhere is this abrogation more apparent than in environmental law. Bankruptcy’s fresh start policy, and its desire to distribute a debtor’s defaults among its various creditors, conflicts with environmental law’s policy of making the polluter remedy their own environmental violations. Because neither Congress’s environmental statutes nor the Bankruptcy Code specifically address whether environmental cleanup orders are claims in bankruptcy, courts disagree on how to treat them in bankruptcy.

The substantive policy of bankruptcy, however, dictates that courts should treat

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11. Id. at 787–88; see, e.g., Adam J. Levitin, In Defense of Bailouts, 99 GEO. L.J. 435, 485 (2011) (discussing GM’s interconnectedness with other companies in the context of its bankruptcy).
15. Id. § 101(5)(B).
16. Id.
18. Jackson, supra note 7, at 225.
19. Id.
20. Id.
environmental cleanup orders as claims because this would allow the debtor to discharge the maximum amount of prepetition liabilities.\textsuperscript{23}

This policy creates a powerful incentive for businesses with environmental liabilities to seek refuge in bankruptcy; if a business is able to have its environmental obligations classified as claims, it may only have to satisfy them partially. Government claims for environmental damages will typically be classified as general unsecured claims of the lowest priority, entitled only to pro rata distribution of the bankruptcy estate.\textsuperscript{24} A polluter can thereby frustrate the efforts of a government agency to use the polluter's assets to pay for environmental cleanup.\textsuperscript{25}

This Note discusses how different courts have treated the dischargeability of environmental cleanup orders in bankruptcy. The Note argues that the current test for when an environmental injunction becomes a claim in bankruptcy fails to give clear guidance to businesses and government agencies. Additionally, this Note proposes that Congress not only amend the Bankruptcy Code to convert environmental cleanup orders into claims, but also to give these claims administrative priority. Section I describes the genesis of the current legal test for when an environmental injunction becomes a dischargeable claim in bankruptcy. Section II discusses why the current legal test for when an injunction becomes a claim yields unpredictable results. This section critiques some of the approaches taken by other legal scholars. Finally, Section III outlines a proposal to amend the Bankruptcy Code to create a compromise between the policy objectives of bankruptcy and environmental law by treating all cleanup orders as administrative claims.

I. GENESIS OF THE CURRENT LEGAL TEST: WHEN AN ORDER BECOMES A CLAIM

Case law spanning more than two and a half decades defines the current legal test for when an environmental cleanup order becomes a claim. This section outlines some of the major developments in this area of law in order to give a sense of how courts have arrived at the current legal test. This section begins with \textit{Ohio v. Kovacs}, the only Supreme Court case on point,\textsuperscript{23, 24, 25}

\textsuperscript{23} STROCHAK, WINE & YATES, \textit{supra} note 22, at 44, (citing Ohio v. Kovacs, 469 U.S. 274, 279 (1985)).


\textsuperscript{25} \textit{Id.}; \textit{In re Chemtura Corp.}, 443 B.R. 601, 605–06 (Bankr. S.D.N.Y. 2011) (describing bankruptcy in which the government settled its two billion dollar claims against debtor for thirty million dollars).
and ends with *Mark IV Industries*, a recent case that states the current legal test.

**A. The Supreme Court Frames the Discussion in Kovacs**

The issue in *Ohio v. Kovacs* was whether the State of Ohio’s environmental cleanup order against a debtor, one William Lee Kovacs, became a claim in bankruptcy.\(^{26}\) If Ohio’s cleanup order was a claim, then Ohio could only make Kovacs pay for cleanup to the extent that he was able to.\(^ {27}\) Conversely, if the cleanup order was not a claim, then Ohio could enforce its cleanup order at Kovacs’s expense.\(^ {28}\) Naturally, Ohio preferred the second option. The critical issue in the case was whether the cleanup order, an “equitable remedy,” gave rise to a “right of payment” for “breach of performance.”\(^ {29}\)

The facts of the case have become legendary. The State of Ohio ordered Kovacs to remediate a hazardous waste site.\(^ {30}\) Kovacs was the Chief Executive Officer and a stockholder of Chem-Dyne Corp.\(^ {31}\) Chem-Dyne owned and operated an industrial waste disposal site in Hamilton, Ohio.\(^ {32}\) In 1976, the State of Ohio’s Environmental Protection Agency and Department of Natural Resources (Ohio) sued Kovacs, both individually and as a company officer, in state court for violating state environmental laws.\(^ {33}\) Ohio alleged that Kovacs polluted public waters with pesticides and industrial waste.\(^ {34}\) In 1979, Kovacs settled the lawsuit with Ohio.\(^ {35}\) Kovacs stipulated that Chem-Dyne would refrain from bringing additional industrial waste onto the property, remove certain environmental hazards from the property, pay $75,000 in compensation for injury to wildlife, and

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27. In a Chapter 7 liquidation, general unsecured creditors are entitled to pro rata distribution of whatever remains after every other class of creditors has been paid—usually very little. See 11 U.S.C. § 726(b) (2006) (providing for pro rata distribution based on 11 U.S.C. § 507). The result in a Chapter 11 reorganization is similar; a creditor cannot receive less than they would in a Chapter 7 liquidation—but not necessarily any more—under the “cram down” provision. 11 U.S.C § 1129(a)(7) (2006).
31. *Id.* at 276.
32. *Id.*
34. *Id.* at 985.
to otherwise cease polluting. The Ohio state court entered judgment accordingly.

Kovacs, however, failed to comply with the terms of the stipulation and judgment entry, a “breach of performance” under section 101(5)(B). Therefore, Ohio moved to have the court appoint a receiver to force him to comply. The court granted Ohio’s motion, authorizing the receiver to take possession of Kovacs’s property and assets. Ohio directed the receiver to remediate the Chem-Dyne site as per the stipulation. Significantly, the receiver had the power to collect reimbursement from Kovacs for the remediation work. If this power “[gave] rise to a right of payment,” then it could be discharged as a claim if Kovacs filed for bankruptcy. And in fact, Kovacs did file for bankruptcy before the receiver had fully remediated the site.

Ohio suddenly faced a problem: Kovacs could walk away from his environmental obligations if they were claims within the meaning of section 101(5)(B), leaving the state to pay for cleanup. Thus, Ohio needed to find a way to pay for the cleanup without “[giving] rise to a right of payment.” Accordingly, Ohio tried to divert Kovacs’s post-bankruptcy earnings to pay for the receiver’s remediation duties. To that end, Ohio filed a motion in state court to discover Kovacs’s earnings. Kovacs, however, successfully stayed those proceedings. On appeal, the Sixth Circuit held that Ohio was ultimately trying to enforce a money judgment against Kovacs; the motion to discover his earnings was the first step in forcing him to reimburse the receiver. The Bankruptcy Code’s “automatic stay” provision, therefore, barred Ohio’s motion in state court to discover his earnings.

36. Id.
37. Id. at 277.
38. Id. at 278.
39. Id. at 276.
40. Id.
41. Id. at 283.
43. Kovacs, 469 U.S. at 276 n. 1 (describing how Kovacs originally filed under Chapter 11 but later converted his petition to a Chapter 7 liquidation).
45. Id. at 277.
46. Id. at 276.
47. Id.
48. Id. (citing 11 U.S.C. § 362 (1982)). Normally, filing a bankruptcy petition automatically stays all proceedings against the petitioner. 11 U.S.C. § 362(a) (2006). However, governments can move to exempt themselves from the automatic stay to exercise their police power against a debtor. Id. at § 362(b)(4). But this exemption does not apply when the governmental unit is trying to enforce a monetary judgment against a debtor. Id.
In response, Ohio filed a complaint in bankruptcy court for declaratory relief.\textsuperscript{50} Ohio sought to put Kovacs’s environmental obligations outside of the bankruptcy proceeding by declaring them nondischargeable duties rather than monetary obligations.\textsuperscript{51} The bankruptcy court, however, found that Ohio’s claim was dischargeable.\textsuperscript{52} The court rejected Ohio’s assertion that Kovacs owed an affirmative obligation to remediate rather than a monetary obligation.\textsuperscript{53} The court reasoned instead that Ohio was mainly seeking payment from Kovacs; therefore, it had a claim in Kovacs’s bankruptcy.\textsuperscript{54} The district court affirmed.\textsuperscript{55}

On appeal, the Sixth Circuit held that Kovacs could not comply with the stipulation and judgment order because the receiver had dispossessed him of the Chem-Dyne site.\textsuperscript{56} Ohio had a monetary claim in Kovacs’ bankruptcy because his only option was to pay money.\textsuperscript{57} On petition from Ohio, the Supreme Court granted certiorari.\textsuperscript{58}

Ohio argued before the Court that Kovacs had no right to pay money instead of performing the cleanup order; therefore, the cleanup order did not “give rise to a right of payment.”\textsuperscript{59} The Court rejected this argument.\textsuperscript{60} Instead, the Court agreed with the court of appeals that Ohio was trying to find a way to pay for work done by the receiver.\textsuperscript{61} Moreover, it found that Kovacs could not perform the work himself because of the receivership.\textsuperscript{62} Therefore, the Court held that, inasmuch as Ohio was merely trying to exact monetary payments from Kovacs, it had a claim subject to discharge.\textsuperscript{63} Kovacs could, therefore, avoid his cleanup obligations to the State of Ohio if his bankruptcy estate did not have sufficient funds to pay for them.

Despite this ruling, the Court circumscribed its holding in five ways.\textsuperscript{64} First, Kovacs’ discharge did not shield him from criminal prosecution for

\begin{itemize}
\item 50. *Kovacs*, 469 U.S. at 276–77.
\item 51. *Id.* at 277.
\item 52. *Id.*
\item 54. *Id.* The court took judicial notice that Ohio had already sought relief from the automatic stay to determine Kovacs’s earnings to this end. *Id.*
\item 55. *In re Kovacs*, 717 F.2d 984, 987 (6th Cir. 1983), *aff'd sub nom.*, Ohio v. Kovacs, 469 U.S. 274 (1985).
\item 56. *Id.* at 988 (“The impact of [Ohio’s] attempt to realize upon Kovacs’ income or property cannot be concealed by legerdemain or linguistic gymnastics.”).
\item 57. *Id.*
\item 60. *Kovacs*, 469 U.S. at 279.
\item 61. *Id.* at 282–83.
\item 62. *Id.* at 283.
\item 63. *Id.*
\item 64. *Id.* at 284–85.
\end{itemize}
environmental crimes or criminal contempt proceedings for violating the injunction.\footnote{Id. at 284.} Second, his discharge did not shield him from any fines or penalties prior to bankruptcy.\footnote{Id. (citing 11 U.S.C. § 523(a)(7) (1978)).} Third, the Court reserved judgment on the legal consequences had Ohio not put Chem-Dyne into receivership.\footnote{Id.} Fourth, the holding did not apply to the injunction to stop polluting.\footnote{Id. at 284–85.} Lastly, the Court stressed that anyone in possession of the Chem-Dyne property had a duty to comply with Ohio’s laws.\footnote{Id. at 285.} Evidently, by circumscribing its holding, the Court did not want its holding to give a broad license to polluters to seek refuge in bankruptcy.

Even so, the Kovacs decision left many questions unanswered because its holding was grounded in the facts of the case.\footnote{See id. (narrowing its holding to situations where the debtor has had the land subject to environmental cleanup obligations dispossessed).} Thus, the Kovacs decision provides little guidance on how different factual scenarios would change whether an injunction was a claim under the Code.\footnote{Id.} Clearly, after the Kovacs decision, all debtors have an obligation to comply with environmental laws, but only up to a point; once that obligation can be reduced to some sort of monetary payment, debtors can discharge the obligation as a debt. Under what circumstances an injunction would give rise to a right of payment was still an open question.

B. The Sixth Circuit Puts the Ball in Congress’s Court . . . And Gets it Right?

The Sixth Circuit tried to clarify under what circumstances the Kovacs decision could turn an ordinary cleanup order into a claim in United States v. Whizco.\footnote{United States v. Whizco, Inc., 841 F.2d 147, 147 (6th Cir. 1988).} In that case, the Surface Mining Control and Reclamation Act of 1977 (SMCRA) obligated the debtor coal mining company, Whizco, and its director to reclaim its mine sites.\footnote{Id. at 148 (citing 30 U.S.C. §§ 1251–1279 (1982)).} Whizco became insolvent and
abandoned its mine sites without properly reclaiming them.\textsuperscript{74} Whizco and its director then filed for Chapter 11 reorganization.\textsuperscript{75}

The Department of the Interior issued Whizco three orders under SMCRA instructing Whizco to properly reclaim its mine sites.\textsuperscript{76} When Whizco failed to comply, the United States sued in district court seeking injunctive relief.\textsuperscript{77} Shortly thereafter, the debtor converted his petition to Chapter 7 liquidation.\textsuperscript{78} Whizco’s director contended that, although he was subject to the same reclamation obligations as Whizco, his bankruptcy discharged them.\textsuperscript{79} The district court found that, because Whizco was defunct, and all of its equipment liquidated, the only way the director could comply with his reclamation obligations was to spend money.\textsuperscript{80} The injunction “gave rise to a right of payment.”\textsuperscript{81} The Sixth Circuit affirmed, viewing section 101(5)(B)’s “right of payment” to really mean “payment to anyone.”\textsuperscript{82} In other words, as long as the debtor had an obligation to spend money, that obligation could be a claim in bankruptcy.\textsuperscript{83} The bankruptcy estate would only have to satisfy the claim to the extent that it has sufficient funds to do so.

However, no other circuit has followed this reading of section 101(5)(B).\textsuperscript{84} Other circuits that have considered the issue have found that the Sixth Circuit’s expansive reading of section 101(5)(B) conflicted with Kovacs intent to preserve governmental authority because it excused debtors of virtually every environmental obligation—after all, every environmental obligation costs money.\textsuperscript{85} By broadening the definition of claims to include every monetary obligation, the \textit{Whizco} court gave

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\item 74. \textit{Whizco}, 841 F.2d at 147.
\item 75. Id.
\item 76. Id.
\item 77. Id. (citing 30 U.S.C. § 1271 (1982)).
\item 78. Id.
\item 79. Id.
\item 80. Id.
\item 81. Id. at 149 (citing 11 U.S.C. § 101(4)(B) (1982)).
\item 82. Id. at 151.
\item 83. This has been called the “expenditure test.” STROCHAK, WINE & YATES, supra note 22, at 43.
\item 84. At least one bankruptcy court, however, has followed its reasoning. See United States v. Robinson \textit{(In re Robinson)}, 46 B.R. 136, 139 (Bankr. M.D. Fla. 1985), rev’d on other grounds, 55 B.R. 355 (M.D. Fla 1985) (holding that the obligation of individual debtor to restore wetlands was dischargeable because it required him to spend money).
\end{itemize}
\end{flushleft}
absolute priority to bankruptcy’s “fresh start” policy at the expense of environmental law’s policy of making the polluter pay.

In that sense, the Court provided a facile solution to the conflict between bankruptcy law and environmental law. The court implicitly recognized this when it noted that Congress bore the responsibility of resolving the apparent conflict.\(^{86}\) While the Whizco court’s overbroad reading of section 101(5)(B) vitiates the polluter pays principle, it got one thing right: the duty to reconcile the policy conflict between environmental statutes and the Bankruptcy Code should fall to Congress, not the courts.

C. The Second and Seventh Circuits Craft a Judicial Solution to the Statutory Conflict

The Second Circuit acknowledged that it was Congress’s responsibility to resolve the statutory policy conflict.\(^{87}\) The court did not take the Sixth Circuit’s easy way out.\(^{88}\) It refused to give absolute primacy to the policy objectives of either the Bankruptcy Code or federal environmental laws.\(^{89}\) The court rejected the debtor’s argument that its injunctive obligations were dischargeable because they required the debtor to spend money.\(^{90}\) The Second Circuit agreed with the district court that the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)\(^{91}\) cleanup orders were dischargeable insofar as they were substitutes for the Environmental Protection Agency (EPA) acting and then seeking payment from the debtor.\(^{92}\) An injunction to cease polluting was nondischargeable, however, because it did not give EPA a right to collect payment.\(^{93}\) However, most environmental injunctions fall into both categories—they contemplate an order to cleanup “ongoing” pollution and order a polluter to cease polluting—and these injunctions are also nondischargeable.\(^{94}\) But this leaves the question of when is pollution ongoing?

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86. Whizco, 841 F.2d at 149 n.5.
87. Chateaugay, 944 F.2d at 1002.
88. See id. ("Of course, the comprehensive nature of the bankruptcy statute does not relieve us of the obligation to construe its terms, nor may we resolve all issues of statutory construction in favor of the ‘fresh start’ objective.").
89. Id.
90. Id. at 1006–07.
92. Chateaugay, 944 F.2d at 1008.
93. Id.
94. Id. at 1008–09.
The Seventh Circuit grappled with this question in *In re CMC Heartland Partners*. The facts of that case were typical. A railroad leased a gravel pit to General Motors (GM) for use as a dumping pit for paint sludge from 1956 to 1974. On the orders of the Wisconsin state environmental agency, GM installed safeguards to prevent leaching of pollutants when they closed the pit. Later, in 1977, the railroad filed for reorganization. One year before the bar date for filing claims, EPA put the gravel pit on the National Priorities List of polluted sites, but did not file a claim before the bar date. The railroad emerged from bankruptcy, but no longer operated as a railroad.

More than ten years after the former railroad (now called CMC Heartland) emerged from bankruptcy, EPA issued an order to CMC and GM to clean up the gravel pit under section 106(a) of CERCLA because the pit was allegedly leaching heavy metals into the groundwater. In response, CMC contended that EPA had a claim that was discharged in CMC’s bankruptcy arising from its prepetition conduct; EPA had every opportunity to file a claim, but failed to, and, therefore, CMC should not have to remedy the pollution of its predecessor company even though it still owned the pit. The court upheld this as a general rule. Specifically, the court held that CERCLA created an obligation that ran with the land. CMC, as the current owner of the site, therefore had to act to remediate “an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance” per CERCLA. In other words, bankruptcy does not discharge cleanup orders for pollution that currently endangers public health.

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95. *In re CMC Heartland Partners*, 966 F.2d 1143, 1147–48 (7th Cir. 1992).
96. *Id.* at 1145.
97. *Id.*
98. *Id.* at 1144.
99. *Id.* at 1145 (citing 42 U.S.C. § 9605(a)(8) (1988)). Putting the site on the National Priorities List signified that EPA believed that the site is currently releasing pollutants, or that it will. *Id.*
100. *Id.*
101. *Id.* (citing 42 U.S.C. § 9606(a) (1988)).
102. *Id.* at 1146.
103. *Id.*
104. *Id.* The court noted in dicta that CMC would have to accept responsibility under CERCLA for its pollution even if it disposed of the property in bankruptcy. *Id.* at 1147. The Third Circuit later held that a company could be liable for ongoing pollution even if it no longer operated the site. Torwico Elecs., Inc. v. New Jersey Dep’t of Envtl. Prot. (In re Torwico Elecs., Inc.), 8 F.3d 146, 151 (3d Cir. 1993) (citing *In re CMC Heartland Partners*, 966 F.2d 1143, 1146 (7th Cir. 1992)).
105. *CMC Heartland*, 966 F.2d at 1147 (citing 42 U.S.C. § 9606(a) (1988)).
The Seventh Circuit again ruled on the dischargeability of environmental cleanup orders in *United States v. Apex Oil Co.* This case was factually similar to *CMC Heartland*. Apex Oil’s predecessor purchased an oil refinery in 1967. In 1987, the predecessor filed for Chapter 11 reorganization. As part of the reorganization, the predecessor sold the refinery in 1988. The reorganized business, Apex Oil, emerged from Chapter 11 reorganization in 1990 with a discharge of all claims. Apex no longer operated any refineries and had little capacity to remediate environmental disasters.

In early 2003, EPA commenced a formal review of Apex’s predecessor’s role in creating a massive underground hydrocarbon plume. EPA invoked its authority under CERCLA and the Clean Water Act of 1972 to commence the investigation. EPA found that the plume was caused in part by Apex’s predecessor’s refinery, and was contaminating local groundwater and emitting noxious fumes, creating health and environmental hazards. Subsequently, EPA entered into a consent decree to begin remediation efforts. Apex, however, declined to contribute. Apex’s share of the cleanup totaled roughly $150 million, though it could defray these costs by seeking contribution payments from other responsible parties.

EPA informed Apex that if it did not comply with the consent decree, it would do the work itself and seek contribution under CERCLA and the Clean Water Act. In particular, EPA did not carry out its threat. Instead, EPA sued Apex for injunctive and declaratory relief. EPA sued for a

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108. *Id.*
109. *Id.*
111. *Apex Oil*, 579 F.3d at 736.
115. *Apex Oil*, 579 F.3d at 735.
117. *Id.*
118. *Apex Oil*, 579 F.3d at 736.
120. *Id.*
declaration that Apex’s cleanup obligation was not discharged in its predecessor’s bankruptcy.\(^{122}\) EPA also sued to compel Apex to remediate the hydrocarbon plume under the Resource Conservation and Recovery Act of 1976 (RCRA).\(^{123}\)

RCRA, unlike CERCLA, does not contain a provision for EPA to remediate first, and then seek contribution from the debtor later.\(^{124}\) Judge Posner found that this difference was the dispositive issue in whether the cleanup order was discharged as a claim in Apex’s predecessor’s bankruptcy.\(^{125}\) An injunction "gives rise to a right to payment" only if it gives the plaintiff the right to collect money from the debtor under the same statute.\(^{126}\) Because RCRA did not authorize EPA to seek contribution from Apex, the injunction could not constitute a discharged claim.\(^{127}\) Rejecting Whizco, Judge Posner reasoned that to hold otherwise would hamper government efforts to enforce injunctions because all injunctions impose some cost on the debtor.\(^{128}\)

D. The Current Legal Test for When An Environmental Cleanup Order is a Claim

Recently, the Bankruptcy Court of the Southern District of New York articulated a test for when an environmental cleanup order becomes a claim in bankruptcy in deceptively simple terms.\(^{129}\) The court consolidated the jurisprudence from \textit{Kovacs} through \textit{Apex Oil} to create a three-factor test (\textit{Mark IV} test) to use when deciding whether injunctions are claims.\(^{130}\) The \textit{Mark IV} test first asks if the debtor is capable of carrying out its injunctive

\(^{122}\). \textit{Id.}

\(^{123}\). \textit{Apex Oil}, 2008 WL 2945402, at *1.


\(^{125}\). \textit{Id.} at 736.


\(^{127}\). \textit{Apex Oil}, 579 F.3d at 737.

\(^{128}\). \textit{Id.} (citing Torwico, 8 F.3d at 150 n.146).

\(^{129}\). \textit{In re Mark IV Indus., Inc.}, 438 B.R. 460, 467–69 (Bankr. S.D.N.Y. 2010).

\(^{130}\). \textit{Id.}
obligations, or if it must do so by paying others.\textsuperscript{131} Second, the test asks whether pollution is ongoing.\textsuperscript{132} If it is, then the debtor must comply.\textsuperscript{133} Third, the test asks whether the government agency has the option under the statute to clean up and then seek contribution from the debtor.\textsuperscript{134}

These three factors form a complex legal test with potentially uncertain outcomes. This Note argues that the current legal test for determining when a cleanup order becomes a claim in bankruptcy, as set forth in \textit{Mark IV}, does not provide clear guidance to either businesses or government agencies.

\section*{II. DAMNED IF YOU DO, BUT NOT IF YOU WON’T?}

The third prong of the \textit{Mark IV} test—whether the government agency has a right to seek contribution under the statute—invites criticism because its arbitrariness could yield unpredictable results. Apex’s petition for certiorari best illustrates this. Apex criticized the Seventh Circuit’s reasoning, arguing that because RCRA gave no right to payment, an injunction under that statute could not constitute a claim.\textsuperscript{135} Apex pointed out that under Federal Rule of Civil Procedure Rule 70(a), EPA did have a right to payment.\textsuperscript{136} This rule provides that:

\begin{itemize}
  \item 131. \textit{Id.} (citing \textit{Chateaugay}, 944 F.2d at 1008; Durham Inland Wetlands & Watercourses Agency v. Jimmo (\textit{In re Jimmo}), 204 B.R. 655, 660 (Bankr. D. Conn. 1997); \textit{Torwico}, 8 F.3d at 151; \textit{Apex Oil}, 579 F.3d at 738).
  \item 132. \textit{Mark IV Indus.}, 438 B.R. at 468 (citing \textit{In re CMC Heartland Partners}, 966 F.2d 1143, 1147 (7th Cir. 1992)). The premise of \textit{CMC Heartland}, that debtors must remediate ongoing pollution at their property even if it arose from prepetition conduct, is largely uncontroversial and will not be discussed in this Note. See, e.g., \textit{CMC Heartland}, 966 F.2d 1143, 1148 (7th Cir. 1992) (noting that even the debtor conceded at oral argument that bankruptcy did not relieve it of the obligation to remediate ongoing pollution).
  \item 133. \textit{Mark IV Indus.}, 438 B.R. at 468 (citing \textit{Torwico}, 8 F.3d at 151 n.6). Courts do not seem to have difficulty with the first prong of the \textit{Mark IV} test of whether the debtor has the ability to comply with the injunction. Short of actually preventing the debtor from complying, not much else seems to satisfy this prong. Requiring a debtor to pay money does not prevent the debtor from complying. \textit{Apex Oil}, 579 F.3d at 738. Likewise, the debtor is not prevented from complying with its injunctive obligations even if it is no longer in possession of the site as long as it has access to it. \textit{Torwico}, 8 F.3d at 151; \textit{Mark IV Indus.}, 438 B.R. at 469. It is nevertheless possible to conceive of other scenarios in which the debtor would be prevented from complying with its injunctive obligations such that its cleanup obligation might be a dischargeable claim.
  \item 134. \textit{Mark IV Indus.}, 438 B.R. at 468–69 (citing \textit{Chateaugay}, 944 F.2d at 1008 (2d Cir. 1991); \textit{Apex Oil}, 579 F.3d at 736).
  \item 135. Petition for Writ of Certiorari at 17, Apex Oil Co. v. United States, 131 S. Ct. 67 (2010) (No. 09-1023) (citing \textit{Apex Oil}, 579 F.3d at 736).
If a judgment requires a party to convey land, to deliver a deed or other document, or to perform any other specific act and the party fails to comply within the time specified, the court may order the act to be done—at the disobedient party's expense—by another person appointed by the court. When done, the act has the same effect as if done by the party. 137

So, EPA did have the right to obtain payment in lieu of performance of the RCRA injunction; if Apex failed to meet its injunctive obligations, EPA had a right to do the work itself and seek contribution from Apex. All EPA had to do was appoint a receiver under this rule.

The irony of EPA’s position that the RCRA injunction was nondischargeable is that it creates a perverse incentive to disobey. 138 After all, the disobedient party would benefit by having a court liquidate its injunctive obligations under Rule 70(a); such a monetary judgment would unquestionably constitute a claim should the party choose to reenter bankruptcy. 139 In Apex’s case, this incentive was considerable—up to $150 million. 140 Had it not complied, and had EPA moved to secure a receiver under Rule 70(a), Kovacs might have controlled the case. 141

Yet, this perverse incentive not to obey injunctions has a silver lining. If Apex liquidated under Chapter 7, EPA would not have been able to use the bankruptcy estate’s assets to pay for cleanup because their RCRA injunction was not a claim. 142 If, however, the RCRA injunction was a claim, then at

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137. FED. R. CIV. P. 70(a).
138. Arguably, holding the RCRA injunction nondischargeable is doubly ironic because the policy of Rule 70 is to preserve the courts’ power to enforce injunctions. See Rodriguez v. Swank, 496 F.2d 1110, 1112–13 (7th Cir. 1974) (bolstering injunction with contingent payments in the event of noncompliance). “The power to order compliance with federal regulations would be meaningless if the injunction were unenforceable.” Id.
140. United States v. Apex Oil Co., 579 F.3d 734, 736 (7th Cir. 2009), cert. denied, 131 S. Ct. 67 (2010).
141. See Lawrence T. Burick & Jennifer L. Maffett, When is a Claim not a Claim: Does Apex Oil Clarify or Confuse?, 12 NORTON BANKR. L. ADVISOR 1 (2009) (“In particular, as in Apex Oil, it appears that the governing Ohio environmental statute only entitled the State to require the owner to clean up his property and there was no alternative right to payment in lieu of requiring the owner to perform such cleanup.”).
142. See Ohio v. Kovacs, 469 U.S. 274, 286 (1985) (O’Connor, J., concurring) (explaining that, in Chapter 7 straight liquidations of corporate debtors, the state environmental agency’s only recourse against the debtor is to have a cognizable claim).
least EPA could have filed a claim as an unsecured creditor if Apex filed for Chapter 7. In that case, it would have at least received its pro rata share of the general unsecured claims.

Apex’s argument that Rule 70 renders all injunctions into claims suffers from one limitation. The argument fails to consider an important power of the bankruptcy court: the power to dismiss petitions, specifically petitions for bad faith. Therefore, if EPA moved to appoint a receiver after Apex had deliberately stalled in satisfying its injunctive obligations, and Apex filed for bankruptcy, the court might simply consider its petition an abuse of the bankruptcy process and dismiss it. Dismissing would render Apex’s argument moot because the entire discussion would be moved outside of the bankruptcy process.

Nevertheless, Apex’s argument deserves attention because it underscores how unpredictable and arbitrary the third prong of the Mark IV test can be. Borrowing a phrase from Judge Posner, “the root arbitrariness” of this prong is that the right to payment must come from the same statute that EPA invokes when requesting an injunction. But how can a business know what statute EPA will invoke?

In *Apex Oil*, EPA initially invoked CERCLA when it threatened to perform the work itself and then bill Apex. EPA then changed course at the last minute when it opted to seek a RCRA injunction instead. EPA’s gambit created uncertainty for Apex because whether Apex had to spend up to $150 million on cleanup depended on how EPA chose to proceed. If EPA chose to act under section 107 of CERCLA as it originally threatened, Apex might have had a valid argument that its obligation was discharged. Accordingly, EPA had to choose carefully because if it acted in such a way

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144. *See*, e.g., *In re Boynton*, 184 B.R. 580, 581 (Bankr. S.D. Cal. 1995) (citing *In re Little Creek Dev. Co.*, 779 F.2d 1068, 1072 (5th Cir. 1986) (explaining that, if debtor’s filing of a petition is a clear abuse of the bankruptcy process, bankruptcy court must dismiss for bad faith)).

145. Courts allow filing of a bankruptcy petition to avoid an adverse judgment if the debtor has a reasonable intention and ability to reorganize. *See*, e.g., *In re Cohoes Indus. Terminal, Inc.*, 931 F.2d 222, 227 (2d Cir. 1991).


148. *Id.* at 7.

149. *See* United States v. Chateaugay Corp. (**In re Chateaugay Corp.**), 944 F.2d 997, 1008 (2d Cir. 1991) (explaining that debtor had a claim if EPA had the authority under CERCLA to do the cleanup work and then recover from the debtor).
as to give itself a “right to payment,” its contribution efforts against Apex might have been barred, depending on when CERCLA liability attached.

Moreover, CERCLA and RCRA liability often overlap. This overlap begs the question of what would have happened if EPA invoked its authority under RCRA, but could have also spent CERCLA funds to remedy the site. In this situation, courts disagree about whether EPA would have a claim under section 101(5)(B). Until the Seventh Circuit handed down its decision, neither party knew where they stood and could not act with confidence in their legal positions.

Therefore, the third prong of the Mark IV test yields unpredictable outcomes because it depends on the actions of both the debtor and the government. Because one party’s rights are determined by the actions or inactions of the other, this prong does not provide clear guidance to either businesses or the government.

A. Why Predictability is the Key

Businesses and governments order their behavior around laws. Bright-line rules make it easy for businesses and governments to conform their conduct to the requirements of the law. They minimize uncertainty by providing predictable outcomes for each course of behavior. On the other hand, a system of standards marked by complex legal tests provides less certainty. Under such a system, businesses and governments have less


151. See James Newton, Searching for A “Right to Payment”: Defining the Scope of Bankruptcy Code S 101(5)(b) Under RCRA and Other Statutes Not Providing Express “Rights to Payment,” 19 PENN ST. ENVTL. L. REV. 55, 76 (2011) (citing Cal. Dept of Health Servs. v. Jensen (In re Jensen), 995 F.2d 925, 929 (9th Cir. 1993) (holding that claim arises under § 101(5)(B) even if EPA did not yet have authority to Act under CERCLA); In re Chi., Milwaukee, St. Paul & Pac. R.R. Co., 974 F.2d 775 (7th Cir. 1992); In re Nat’l Gypsum Co., 139 B.R. 397, 405 (Bankr. N.D. Tex. 1992) (explaining that claim arises when all the actions giving rise to CERCLA liability have occurred, even if EPA cannot yet act); United States v. Union Scrap Iron & Metal, 123 B.R. 831, 835 (Bankr. D. Minn. 1990) (holding that because “all the elements necessary to give rise to a legal obligation under the relative substantive non-bankruptcy law,” EPA did not have a discharged claim in debtor’s bankruptcy)) (explaining that courts are split on whether a cognizable claim exists even if not all the elements of CERCLA liability are met).


notice of what consequences flow from their conduct. The end result is that complex legal tests encourage appeals and gamesmanship. In the interests of providing predictability for businesses and the government, a system of bright-line rules should, therefore, be preferred over a system of standards involving complex legal tests.

Predictability is especially important in bankruptcy. Businesses structure their activities around bankruptcy law. For better or for worse, businesses increasingly treat bankruptcy as part of their corporate strategy. As a result, government agencies now routinely work with businesses to ensure state environmental interests survive bankruptcy. Both governments and businesses would benefit from a system of clear rules for when injunctions become claims because such a system would provide clear guidance.

B. Fresh Look at the “Fresh Start” Policy in the Context of the Corporate Debtor’s Environmental Obligations

Apex Oil, the most recent circuit court decision on this subject, has reopened the discussion on the dischargeability of environmental injunctions. It has drawn considerable criticism, however. These criticisms fall into two categories: First, that Apex Oil is inconsistent with Kovacs; second, that Apex Oil gives undue preference for environmental policy over bankruptcy policy. Both criticisms miss the mark.

First, despite arguments to the contrary, Apex Oil is perfectly consistent with Kovacs. The Supreme Court stressed that its holding was not meant to hamstring governmental efforts to force polluters to clean up. If an injunction has to only meet the minimal requirement of creating a “right

155. Id.
158. Miller, supra note 157, at 3.
against the debtor that is capable of sharing in the assets of the bankruptcy estate” to become a claim, virtually every injunction will be dischargeable. After all, virtually every environmental obligation costs money. If debtors could treat all of their environmental expenses as claims subject to discharge, governments would have to pay for whatever obligations the debtor cannot satisfy. Accordingly, by expanding the definition of a claim to include all cleanup orders, debtors would have an even greater incentive to seek bankruptcy protection than they currently have. Consequently, governmental authority to enforce environmental laws would diminish. The Supreme Court has repeatedly strived to preserve governmental authority to avoid this outcome.

The problem with the second criticism of the Apex Oil decision—that it gives undue preference to environmental policy over bankruptcy policy—is that this criticism overstates the so-called “fresh start” policy. The Supreme Court has discussed the “fresh start” policy as it applies to individual debtors; the “fresh start” serves to mitigate the psychological ills associated with financial failure. Corporations do not experience these ills. Some scholars even question the extent to which the “fresh start” policy should apply to corporate debtors. Accordingly, the “fresh start” policy must, therefore, serve some other purpose if it is to trump environmental policy.

One justification for applying the “fresh start” policy to corporations is that corporate reorganization can mitigate the social damage that stems from a company’s insolvency. While unquestionably valid, this logic only goes so far. Bankruptcy is fundamentally a question of allocating resources. Bankruptcy entails a decision to either let a debtor keep its assets and continue to operate, or to liquidate those assets and distribute them to purchasers. The assumption of the pro-“fresh start” line-of-reasoning is that a debtor’s assets maximize social welfare if they remain with the debtor in all cases.

163. Brand, supra note 136, at 223.
164. See Kovacs, 469 U.S. at 285 (circumscribing holding to preserve governmental authority to enforce environmental statutes against debtors); see also Midlantic Nat’l Bank v. N.J. Dep’t of Envtl. Prot., 474 U.S. 494, 506–07 (1986) (holding that Chapter 7 trustee may not abandon property in contravention of environmental laws that protect health and safety).
166. Even the Sixth Circuit has declined to extend Whieco to reorganizing corporate debtors. Brief for the United States in Opposition at 7, Apex Oil Co. v. United States, 131 S. Ct. 67 (2010) (No. 09-1023).
167. See JACKSON, supra note 7, at 210 (The justification for Chapter 11, in other words—and the measure against which its provisions should be examined—is whether the reorganized firm is better for its owners as a group than alternative uses of the assets).
This conclusion is unwarranted. When a corporate debtor liquidates, its assets are sold by the Chapter 7 trustee and it ceases to exist as an entity.\footnote{See 11 U.S.C. § 727(a)(1) (providing that a Chapter 7 liquidation ends in the dissolution of the corporation).} The proceeds go to the creditors and the administrators of the bankruptcy estate. The assets go to whomever buys them. For example, Apex now stores, distributes, and sells petroleum products wholesale.\footnote{APEX OIL CO., http://apexoil.com (last visited Oct. 18, 2012).} If its cleanup obligation forced it into liquidation, other businesses would simply purchase its assets (trucks, storage tanks, etc.) and assume its contractual obligations. The debtor’s facilities might even continue to operate because the trustee would try to sell them as is, rather than piecemeal, to maximize return to the creditors.\footnote{See 11 U.S.C. § 704(a)(1) (2006) (requiring the trustee to act in “the best interests of parties in interest”).} Apex would cease to exist, but its loss would create gains in the form of consumer surplus to those businesses that purchased its assets at discounted prices. Liquidation of a company, therefore, does not necessarily reduce overall social welfare. What is bad for a single business is not necessarily bad for society.\footnote{Krasoff, supra note 160, at 209 (citing F. REGIS NOEL, A HISTORY OF BANKRUPTCY LAW 181 (William S. Hein & Co. 2002) (1919)).}

Significantly, Apex continues to operate.\footnote{APEX OIL CO., supra note 170.} Apex has not filed for bankruptcy in spite of its debts to third parties arising out of its cleanup obligation. Taxpayers do not have to pay for its predecessor’s environmental externalities. This case, therefore, provides an excellent example of why forcing businesses to comply with cleanup orders, instead of relieving businesses of them, increases social welfare in at least some cases. To be sure, the “fresh start” principle has some limitations. Conceding that a debtor’s “fresh start” is a worthy objective does not render it into an absolute imperative that should “trump” every other policy objective.\footnote{Krasoff, supra note 160, at 205 (citing Anne M. Lawton & Lynda J. Oswald, Scary Stories and the Limited Liability Polluter in Chapter 11, 65 WASH. & LEE L. REV. 451, 460–61 (2008)).} Rather, a corporate debtor’s “fresh start” should only be allowed to the extent that it maximizes social utility.

Aside from these logical limitations of preferring a debtor’s “fresh start,” this approach suffers from another flaw: it requires the courts to effectuate the policy of the Bankruptcy Code, to the exclusion of environmental policy. Courts remain bound to carry out the intent of Congress. Unfortunately, Congress has not made its intent clear. Congress has variously defined “claims” in the broadest possible sense\footnote{In re National Gypsum Co., 139 B.R. 397, 405 (Bankr. N.D. Tex. 1992) (“[A]ll legal and equitable claims being the same, all environmental claims are ‘claims’ as set forth in § 101(5).”}).
maintaining that bankruptcy should not relieve debtors of their obligations to the general public and the environment. In view of these conflicting intents, courts disagree on which policy should trump. This disagreement is problematic for two reasons.

First, when courts decide cases on policy grounds, they invade Congress’s jurisdiction. When a court gives absolute preference to either environmental law or to the Bankruptcy Code by classifying a cleanup order as a claim, it can dramatically affect the way society allocates its resources. For instance, when a court classifies a cleanup order as an unsecured claim or administrative expense, the other general unsecured creditors invariably face a smaller payout. On the other hand, when a court treats a business’s environmental obligations outside of the bankruptcy process, it hurts the business’s chances of reorganizing. In either event, Courts are ill-equipped to resolve this complicated policy question. Rather, where Congress has created statutes with competing purposes, only it can reconcile them.

Second, courts frustrate expectations when they decide whether to include cleanup orders in the bankruptcy based on policy considerations. For example, as mentioned above, in Apex’s dispute with EPA, neither party understood with any certainty what legal consequences would flow from their actions. As a result, a lengthy legal dispute followed. While the Seventh Circuit sided with EPA, this was not a foregone conclusion.

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177. See, e.g., Petition for Writ of Certiorari at 24, Apex Oil Co. v. United States, 131 S. Ct. 67 (2010) (No. 09-1023) (asserting that Apex could not have reorganized if it had been required to clean up the refinery site during bankruptcy); Monograph: Environmental Issues in Bankruptcy Cases, COLLIER ON BANKRUPTCY § 3(1) (16th ed. 2012) ("[E]nvironmental obligation can pass through the reorganization and can impose a significant burden on the reorganized company, the classification of environmental obligations can play a key role in determining whether to proceed under a chapter 11 reorganization or a chapter 7 liquidation.").


179. Pasquarella, supra note 178, at 603 (citing Nancy Hisey Kratzke, Dischargeability Issues and Superfund Claims: The Conflict Between Environmental and Bankruptcy Policies, 17 COLUM. J. ENVTL. L. 381, 409 (1992)).

180. See United States v. Apex Oil Co., 579 F.3d 734, 736 (7th Cir. 2009), cert. denied, 131 S. Ct. 67 (2010) (agreeing with Apex that Whizco supported their position).
Moreover, nothing prevents another pro-“fresh start” court in another circuit from siding with the next Apex in another factually similar scenario. More costly appeals will ensue as debtors and government agencies dispute whether cleanup orders are claims.

Therefore, the pro-“fresh start” criticisms of the third prong of the *Mark IV* test do not correctly frame the debate; this should not be a debate over the relative importance of the debtor’s right to reorganize versus the benefits of a healthy environment. Instead, the discussion should focus on crafting a solution that allows businesses and governments alike to form clear expectations based on bright-line rules while addressing the debtor’s environmental defaults.

**III. A PROPOSAL FOR AMENDING THE BANKRUPTCY CODE**

The competing purposes of Congress’s environmental statutes and the Bankruptcy Code have created a complex system of legal tests for when a cleanup order becomes a claim in bankruptcy. But this test fails to provide clear guidance to corporate and government actors. To remedy this problem, Congress must reconcile the competing policies of its environmental statutes and the Bankruptcy Code. Accordingly, Congress should amend section 101(5)(B) to include cleanup orders as claims, but should also give these claims the same priority as administrative expenses under section 503(b). This would ensure that bankruptcy does not prevent government agencies from protecting public health and the environment. More importantly, this amendment to the Code would end the uncertainty described in Section II and replace it with a bright-line rule.

Furthermore, recognizing cleanup orders as claims would allow some businesses to shed their environmental liabilities in bankruptcy once and for all—by satisfying them. Businesses would also have clear notice of their legal position with respect to their environmental obligations. It would give them clear notice that they could not use bankruptcy to free themselves from their environmental obligations altogether. This amendment would

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allow businesses to shed more of their liabilities in bankruptcy and would unburden taxpayers of cleanup obligations, all while giving parties clear guidance.

A. The Mechanics of the Proposal

1. Notice Provision

One fundamental issue with this proposal is that environmental problems are often hard to detect. If most environmental liabilities were allowed as bankruptcy claims, governments might fail to detect them before the bar date for filing claims, especially if they have no notice of the bankruptcy. Thus, to ensure that all environmental claims would be included in the bankruptcy, each business would have to give EPA or the state environmental agency a reasonable opportunity to assess the situation.

This type of notice provision is not a new idea. Senators Cantwell (D-WA), Jeffords (D-VT), and Boxer (D-CA) attempted to pass such legislation in 2006. The relevant provision required businesses to give notice before filing for bankruptcy. A similar notice provision would be required in this proposal to ensure that governmental agencies would not forfeit environmental claims simply because they failed to detect them.

2. Estimation of Claims

Another potential pitfall of categorizing all cleanup orders as claims is that environmental remediation is often a long process, often requiring lengthy scientific analysis and litigation. Fortunately, the Bankruptcy
Code already furnishes a solution to this: estimation of claims under section 502(c).\(^{186}\) Therefore, after sufficient notice, the court should hold a hearing to estimate the value of the debtor’s cleanup order liabilities for allowance purposes. Cleanup orders should be liquidated based on fair market value of the net present value of cleanup.\(^{187}\) These orders should be flexible to account for whatever contingencies might arise during the cleanup.\(^{188}\)

3. Drawbacks

One drawback to this proposal is that it might hinder some businesses from reorganizing altogether.\(^{189}\) Faced with substantial cash outlays for environmental obligations, some businesses will not be able to draft a feasible plan to repay creditors.\(^{190}\) As a result, some debtors will not be able to reorganize.

Notwithstanding these drawbacks, treating environmental cleanup orders as claims might offer some countervailing advantages to debtors: notably, easier administration of the bankruptcy estate. For instance, outside of bankruptcy, negotiation with environmental agencies is otherwise protracted and expensive.\(^{191}\) Bankruptcy greatly expedites these negotiations, lessening their overall financial impact on the debtor.\(^{192}\) Because bankruptcy provides an impetus to deal with environmental obligations quickly and efficiently, it would preserve the value of the estate. Additionally, the proposal would obviate appeals and litigation with respect to the treatment of the debtors’ environmental liability, further lessening the administrative expenses of the estate.

\(^{186}\) The Bankruptcy Code provides that claims of an uncertain amount may be estimated in the interests of efficient administration of the case. 11 U.S.C. § 502(c) (2006). This provision also includes estimation of “any right to payment arising from a right to an equitable remedy for breach of performance.” Id.

\(^{187}\) See id. (providing that claims may be estimated for the expeditious administration of the estate).

\(^{188}\) See In re MacDonald, 128 B.R. 161, 165 (Bankr. W.D. Tex. 1991) (cautioning that claims estimation process must remain flexible and adaptable for expeditious administration of the estate).

\(^{189}\) Petition for Writ of Certiorari at 24, Apex Oil Co. v. United States, 131 S. Ct. 67 (2010) (No. 09-1023) (asserting that Apex could not have reorganized if it had been required to clean up the refinery site during bankruptcy); Monograph: Environmental Issues in Bankruptcy Cases, COLLIER ON BANKRUPTCY § 3(1) (16th ed. 2012) (“[E]nvironmental obligation can pass through the reorganization and can impose a significant burden on the reorganized company, the classification of environmental obligations can play a key role in determining whether to proceed under a chapter 11 reorganization or a chapter 7 liquidation.”).

\(^{190}\) See 11 U.S.C. 1129(a)(11) (requiring feasibility of plan as a condition of confirmation).

\(^{191}\) Davis & Retallick, supra note 182, at 1.

\(^{192}\) Id.
B. Modifying the Code to Prioritize Environmental Cleanup Orders as Claims Comports with the Modern Trend to Codify Bankruptcy Practices

The Bankruptcy Reform Act of 1978 replaced the Bankruptcy Act of 1898 with the modern Bankruptcy Code.¹⁹³ Whereas the Bankruptcy Act of 1898 conferred broad equitable powers to bankruptcy judges, the Bankruptcy Code contemplates a more statutory-based system of administering bankruptcies.¹⁹⁴ This shift evinces Congress’s preference for a clear, predictable set of codified rules over a process based on judicial discretion.¹⁹⁵

The judicially created test for when a cleanup order becomes a claim in bankruptcy defies this preference because it allows bankruptcy courts discretion in whether to treat a cleanup order as a claim. This test has arisen in the absence of clear statutory treatment of environmental cleanup orders in the Bankruptcy Code or clear statutory treatment of bankruptcy in the federal environmental statutes. In that sense, the Mark IV test can be a federal bankruptcy common law solution to the unclear language of section 101(5)(B). The test allows bankruptcy judges equitable discretion to weigh the three factors in deciding whether a cleanup order is a claim.¹⁹⁶

Statutorily rendering cleanup orders into administrative priority claims, however, would be the next logical step in the trend away from broad equity powers. This solution would remove judicial discretion to weigh equities in favor of a clear-cut rule. No longer would bankruptcy judges retain the power to balance the equities of each case in which a debtor has environmental defaults—thereby upsetting the expectations of businesses, governments, or creditors. Instead, the duty of bankruptcy judges under this proposal would be to simply apply the Code as it is written. This proposal would, therefore, give clearer notice to all parties of their rights.

¹⁹⁵. See Adam J. Levitin, Toward A Federal Common Law of Bankruptcy: Judicial Lawmaking in A Statutory Regime, 80 AM. BANKR. L.J. 1, 2 (2006) (“The very nature of complex statutory structures is to create clear, one-size-fits-all rules that lack the fact-intensive flexibility and individualized justice of equitable discretion.”).
¹⁹⁶. The Circuits are even split as to what powers a bankruptcy court has in creating federal bankruptcy common law. Levitin, supra note 195, at 4 n.13 (citing In re Owens Corning, 419 F.3d 195, 205 (3d Cir. 2005) (assuming existence of federal common law of bankruptcy emanating from equity); Walker v. Cadle Co. (In re Walker), 51 F.3d 562, 566 (5th Cir. 1995) (denying bankruptcy courts the power to create an equitable right of contribution under § 362 of the Bankruptcy Code)).
CONCLUSION

The most recent *Apex Oil* decision illustrates why the conflict between the competing policies of bankruptcy and the environmental laws has reached a logical and theoretical impasse. This impasse has created a complex system of legal tests for when an injunction becomes a claim in bankruptcy. Some criticize this system of tests as unduly favorable to environmental law. However, these criticisms are premised on a misguided assumption that reorganization is an absolute directive that trumps environmental law. Rather, the Code must be amended to enshrine environmental policy objectives. This Note’s proposed solution would give governments the ability to collect on their environmental claims while enhancing predictability for all parties through clear legal guidance.
WET FEET MARCHING: CLIMATE JUSTICE AND SUSTAINABLE DEVELOPMENT FOR CLIMATE DISPLACED NATIONS IN THE SOUTH PACIFIC

Marissa S. Knodel*

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INTRODUCTION

At the first United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP) held in Berlin in 1995, Atiq Rahman of the Bangladesh Centre for Advanced Studies gave an impassioned speech to the delegates and warned, “If climate change makes our country uninhabitable...we will march with our wet feet into your living rooms.”¹ Climate change related impacts such as floods, tsunamis, hurricanes, and drought have already caused millions of people around the globe to relocate, both temporarily and permanently, within and without their home countries.² Never before, however, have climate change related impacts resulted in the disappearance of a nation and forced its population to resettle in a foreign country without any possibility of returning to its homeland. Yet the permanent displacement of a nation due to anthropogenic climate change may soon become a reality. Despite numerous mitigation efforts, including building sea walls and planting mangrove trees, rising sea levels and storm surges have left few families on the Carteret Islands

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of Papua New Guinea homeless and without adequate food and fresh water supplies. The islands are predicted to be underwater by 2015, earning the people of the Carterets the notorious distinction as the world’s first climate “refugees.”

The inevitable prospect of an entire nation becoming inhabitable due to climate change and its population permanently relocating raises concerns that go far beyond immediate humanitarian needs, such as food and shelter, to broader concerns, such as sovereignty, citizenship, and cultural identity. The practical, legal, and ethical consequences of climate change displacement in the South Pacific raise several important questions. First, how and where should relocation occur, and what are the immediate humanitarian needs as well as long-term development needs of displaced nations? Second, who and what caused or contributed to the relocation, and who is responsible for aiding these most vulnerable nations? Third, if responsibility can be assigned and allocated, is there an obligation to act, and what form should such actions take? Fourth, should such actions be based on human rights, the right to development, the right to a sustainable environment, climate justice, or all of the above? In order to answer these questions, it is necessary to (1) evaluate the causes and consequences of climate change displacement; (2) identify the needs of the people and nations permanently displaced; (3) review the current legal and policy frameworks that attempt to mitigate the causes of climate change, adapt to its negative impacts, and address the needs of those suffering from such impacts; (4) explore the normative principles underlying the concepts of climate justice and sustainable development; and (5) analyze whether such principles can be incorporated into existing frameworks, or whether new ones should be developed.

This paper seeks to identify the legal, political, and ethical implications of nations permanently displaced by climate change and evaluate whether the current legal and policy frameworks that attempt to address climate change and human displacement adequately incorporate the principles of climate justice and sustainable development. The scope of this paper is limited to the group of Pacific Small Island Developing States (PSIDS) and explores their options to achieve climate justice and promote sustainable


4. Id.
development in the face of permanent displacement due to climate change. Part I illustrates the particular vulnerability of the PSIDS to climate change due to their geographical location and developmental status. Part II reviews the current legal and policy frameworks in the realms of climate change, human displacement, sustainable development, and climate justice. Part III discusses the policy challenges facing the PSIDS as they confront climate displacement, including recognition of climate-displaced persons under international law, the causal link between climate change and human displacement, and the integration of the climate change and human rights based frameworks. Part IV analyzes the four main strategies used to address the unique needs of the PSIDS that face climate change displacement: mitigation, adaptation, relocation, and litigation. Part V explores how climate justice and sustainable development may be incorporated into new or existing frameworks that attempt to address climate change displacement. Finally, Part VI reviews strategies taken and proposed at the international, regional, and local level to address climate change displacement in the South Pacific and proposes an integrated, multilateral approach based on furthering sustainable development and promoting climate justice.

Global climate change is the seminal issue of our contemporary world because it sets the interdisciplinary stage for a variety of political, social, and economic issues, and incorporates normative discussions about responsibility, equity, and fairness. The driving forces behind the negative impacts of global climate change illustrate a disparity between those countries that have developed and profited on cheap fossil fuels and those countries that now bear the burden of paying the externalized costs of such development. Discussions concerning the human aspects of global climate change are inextricably linked to the related concepts of climate justice and sustainable development. Indeed, any law or policy that attempts to address the causes and consequences of climate change on the human environment must necessarily include both normative principles and practical solutions that underlie and advance climate justice and sustainable development.

The most effective way for the international community to fulfill its obligations to the vulnerable nations of the South Pacific, meet the unique needs of climate-displaced persons, further sustainable development, and

promote climate justice is to first develop a legally recognized definition of a person displaced by climate change. First, such a definition would take into account the cause and type of displacement; the collective movement of large numbers of people and not just individuals; and the need for long-term development assistance as well as short-term humanitarian assistance. Second, the international community must improve mitigation measures by developing legally binding greenhouse gas emission reduction targets that attempt to stabilize global temperature at 1.5°C above preindustrial levels. Third, it will be necessary to create a new convention for persons displaced by climate change that combines elements of the climate change, refugee, human rights, sustainable development, and climate justice agendas. Included in the convention could be a new institutional body that would operate as an “intergovernmental panel on the human impacts of climate change.” Such an institutional body could help conduct vulnerability assessments, and work with communities in the South Pacific to improve their adaptive capacity and enable participation at all levels of the policy-making process. Lastly, the new convention must contain a funding mechanism that would take binding contributions from countries based on their historical “luxury” emissions and the “beneficiary pays” principle in order to offer grants and other technical assistance for climate change adaptation strategies.

6. Frank Biermann & Ingrid Boas, Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees, 10 GLOBAL ENVTL POLITICS 60, 63 (2010), available at http://www.bupedu.com/lms/admin/uploaded_article/ea.603.pdf (The cause and type of displacement may be voluntary versus forced, temporary versus permanent, and transnational versus inland.).
9. Id.
10. Sujatha Byravan & Sudhir Chella Rajan, The Ethical Implications of Sea-Level Rise Due to Climate Change, 24 ETHICS & INT’L AFF. 239, 244 (2010) (explaining that “Luxury” emissions refer to those associated with wasteful lifestyle choice, as distinct from “survival” emissions that are associated with subsistence living).
11. Id. at 254 (noting that the beneficiary pays principle requires those countries that undertook and benefited from emissions activities to be held liable for the costs of combating their negative externalities).
12. Benito Müller, An FCCC Impact Response Instrument as part of a Balanced Global Climate Change Regime, OXFORDCLIMATEPOLICY.ORG 3 (2002), http://www.oxfordclimatepolicy.org/publications/documents/sri.pdf (proposing a Disaster Relief Fund under the auspices of the UNFCCC and calling for “binding up-front contributions from the industrialized country parties to the [UNFCCC] . . . to cover the costs of the international relief effort for climate related disasters”).
I. CLIMATE CHANGE AND ITS UNIQUE IMPACTS ON SOUTH PACIFIC ISLAND NATIONS

In order to develop a new definition and convention for people displaced by climate change, one must have an understanding of the particular vulnerability the PSIDS face due to anthropogenic climate change. The 2007 Intergovernmental Panel on Climate Change (IPCC) Summary for Policymakers concluded that global warming is “unequivocal” due to “increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level.”

Sea levels are expected to rise between two to nine millimeters per year and are “very likely [to] due to the increase in anthropogenic greenhouse gas concentrations” over the past fifty years. Even if greenhouse gas concentrations were to stabilize at current levels, the long time scales associated with thermal expansion of the oceans means the earth is due for centuries of rising sea levels.

For small island nations and coastal populations, rising sea levels will result in saltwater intrusion, flood and storm damage, wetland loss, and erosion, which, in turn, will cause loss of available land for cultivation, declining freshwater supplies, and, in many cases, will reduce the ability of a nation and culture to exist in their original homeland. In 1990, the IPCC predicted that “the gravest effects of climate change may be those on human migration.” Based on a range of emissions scenarios, the accepted figure estimates that climate change impacts will displace anywhere between fifty and two hundred million people within their country or across international borders on a temporary or permanent basis by 2050. Loss of land due to climate change and sea level rise exacerbate many other human development issues as well, including the ability of a nation to produce its


15. IPCC, supra note 13, at 16.


own food, access fresh water, and provide for the education, health, safety, and welfare of its population.\footnote{19} The impacts of environmental degradation due to climate change are “socially and spatially constructed” and must be understood in the “broader political and cultural context of a region or country.”\footnote{20} The PSIDS are developing nations that contribute less than one percent to global greenhouse gas emissions and yet are among those that will suffer the most from its adverse effects.\footnote{21} Risks posed to the PSIDS will vary according to the magnitude and severity of a given climate “hazard,” the likelihood of the hazard occurring, and the island’s particular vulnerability, which includes existing economic, social, and physical conditions.\footnote{22} Factors influencing an island’s vulnerability also include the inhabitants’ culture, traditions, gender, social networks, equity, and governance.\footnote{23}

Displacement due to sea level rise requires permanent relocation to a new country and consequently raises questions of a population’s refugee status and national sovereignty.\footnote{24} In this respect, the PSIDS are in a unique and dire situation.\footnote{25} The Carteret Islands are a stark example of what other South Pacific nations and low-lying coastal populations will face in the coming decades. The Carterets originally consisted of six atolls at the northeast end of Papua New Guinea. During the past twenty years, one of the atolls, which sits only 1.2 meters above sea level, has been divided due to rising sea levels.\footnote{26} The approximately 3,300 Carteret islanders estimate

\begin{itemize}
\item \textit{Id.} at 8.
\item TOMPKINS, ET AL., supra note 14, at 29 (“Hazard” is defined as climate change impacts such as “intense storms, flooding or extreme temperatures”); \textit{Id.} at 32 (Economic factors include small, domestic markets, dependence on imports, and high transport costs; social factors include population size, density, and distribution, poverty, and community involvement; and geo-physical conditions include size, elevation, location, and physical infrastructure).
\item \textit{Id.} at 23.
\item \textit{Id.} at 32.
\item Ryan Jarvis, Sinking Nations and Climate Change Adaptation Strategies, 9 SEATTLE J. SOC. JUST. 447, 454 (2010).
\item \textit{Id.}
\end{itemize}
that over fifty percent of their land has been lost to the sea.\textsuperscript{27} Saltwater intrusion has also cost the Carterets the swamp taro, their staple food crop, and freshwater is increasingly difficult to come by.\textsuperscript{28} Rising sea levels will also threaten many traditional practices central to Carteret culture, such as the passing of land from mothers to daughters.\textsuperscript{29} The Cartaret islanders tried alternative adaptation strategies, including building sea walls and planting mangrove trees, but these strategies failed to halt the sea’s continuous onslaught.\textsuperscript{30} Absent effective mitigation strategies to reduce greenhouse gas emissions in developed nations, the Carteret islanders are left with no other choice but to abandon their cultural homelands for an uncertain future in a new territory, where their rights to national self-determination and sustainable development are left to an ambiguous policy arena.

\section*{II. Current Legal and Policy Frameworks That Address Climate Change and Human Displacement}

Climate change displacement encompasses two broad realms of international law: climate change law and refugee law. The primary laws governing climate change at the international level are the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol.\textsuperscript{31} Regional level climate change mechanisms include the Pacific Islands Framework Convention on Climate Change and the Niue Declaration on Climate Change.\textsuperscript{32} The 1951 Convention relating to the Status of Human Refugees and its 1967 Protocol are the primary international instruments that govern the status, protection, and rights of refugees. The concepts of sustainable development and climate justice were developed in connection with meetings and documents concerning climate change and refugee law. These meetings include the 1972 Stockholm Conference on the Human Environment,\textsuperscript{33} the 1987 World Commission on Sustainable Development, the 1992 Earth Summit,\textsuperscript{34} the 1994 Global Conference on Sustainable Development of Small Island Developing States, and the 2002 World Summit on Sustainable Development.\textsuperscript{35} This

\begin{footnotesize}
\begin{enumerate}
\item[27.\ ] Id.
\item[28.\ ] Id.
\item[30.\ ] CARTERETS INTEGRATED RELOCATION PROGRAM, supra note 30.
\item[31.\ ] See discussion \textit{infra} Section II. A, at 10.
\item[32.\ ] See discussion \textit{infra} Section II. A, at 10–11.
\item[33.\ ] See discussion \textit{infra} Section II. C, at 12.
\item[34.\ ] See discussion \textit{infra} Section II. C, at 13.
\item[35.\ ] See discussion \textit{infra} Section II. C, at 14.
\end{enumerate}
\end{footnotesize}
section will provide a review of these instruments and their benefits and limitations with respect to meeting the needs of climate change displaced nations in the South Pacific.

A. Climate Change Agreements at the International and Regional Level

The UNFCCC was created to stabilize “greenhouse gas concentrations in the atmosphere” at a level that would “prevent dangerous anthropogenic interference with the climate system.”36 The Parties to the Convention recognized that low-lying and other small island countries are “particularly vulnerable to the adverse effects of climate change,” and noted that developed countries produced the largest share of historical and current greenhouse gas emissions.37 The UNFCCC concluded, on the basis of equity and common but differentiated responsibilities, that developed countries should “take the lead in combating climate change and the adverse effects thereof,” and provide new and additional resources, both financial and technical, to developing countries to help implement the Convention.38

The 192 original signatories (194 as of April 2010) pledged to meet the “specific needs of and special circumstances of developing countries.”39 Scientific consensus translates this goal into an eighty percent reduction in greenhouse gas emissions by 2050 in order to prevent a maximum 2°C rise in global temperature.40 At the fifteenth Conference of the Parties (COP 15) held in Copenhagen in 2009, the Alliance of Small Island States (AOSIS) proposed a maximum increase in global temperature of 1.5°C because the stated goal of 2°C is not enough to prevent some South Pacific nations from going underwater.41 Tuvalu pushed for a legally binding commitment to this number; however, the international community failed to produce any binding agreement on greenhouse gas reductions.42 The lack of progress, voluntary nature, and dominance of developed countries’ voices in the international climate policy debate render the goals of the UNFCCC mere rhetorical aspirations rather than legally binding commitments to prevent dangerous anthropogenic climate change. The disadvantages of the

37. Id. Preamble.
38. Id. art. 3(2).
39. Id. art. 3(1).
40. IPCC, supra note 13, at 20.
41. Alliance of Small Island States, supra note 7.
42. Id.
UNFCCC include its focus on prevention and mitigation rather than adaptation, its “reluctance” to incorporate human rights issues, and its “history of inaction.”43 There are, however, some advantages of a global agreement like the UNFCCC, which include an abroad mandate to address a wide variety of issues related to climate change, a body of scientific experts, and a funding mechanism.44

The Kyoto Protocol was created in 1997 in order to set binding targets for Annex I (developed) countries to reduce greenhouse gas emissions by five percent below 1990 levels between 2008 and 2012.45 Thus far, thirty-seven industrialized countries, excluding the United States, and the European Union have ratified the Protocol.46 The Protocol is primarily a mitigation mechanism that places emissions caps on Annex I countries. The Protocol is controversial because it exempts large, developing countries that produce vast amounts of greenhouse gas emissions, such as China and India, from any emissions caps.47 In addition, market-based mechanisms that allow the trade of emission reduction units and programs like the Clean Development Mechanism (CDM) permit the largest emitters to continue in the hope that their emissions will be offset by some future program or project.48 By the time the Protocol went into effect in 2005, a prominent study revealed that full compliance would only reduce global warming by 0.03°C by 2100.49

A new global agreement for climate displaced persons will need to take the advantages and disadvantages of the UNFCCC and Kyoto Protocol into account in order to ensure that the agreement continues to address a wide variety of climate change issues as they relate to the human environment. Remembering lessons learned from UNFCCC and Kyoto is also critical to better utilizing scientific assessments in predicting, and effectively responding to, the adverse impacts of climate change. The new agreement should include adaptation as well as legally binding mitigation measures and provide adequate funding for such measures.

44. Id.
48. Kyoto Protocol Fact Sheet, supra note 45.
Regional climate change instruments include the Pacific Islands Framework for Action on Climate Change ("Pacific Framework") and the Niue Declaration on Climate Change ("Niue Declaration"). The Pacific Framework timeframe runs from 2006 to 2015 and includes six main objectives: “implementing adaptation measures; governance and decision-making; improving understanding of climate change; education, training and awareness; contributing to global greenhouse gas reduction; and partnerships and cooperation.”\(^{50}\) The Pacific Framework does not create legal rights or impose obligations under international law, but is meant to promote an integrated, multi-stakeholder approach to climate change issues.\(^{51}\)

The leaders of the Pacific Islands Forum developed the Niue Declaration to request that the international community take the following steps: (1) strengthen meteorological services, mitigation, and adaptation measures; (2) consolidate and distribute information on climate change; (3) increase Pacific island countries’ engagement in the UNFCCC; and (4) secure new and additional financial and technical resources for climate change mitigation, adaptation, and relocation.\(^{52}\) Both regional instruments are beneficial in that they highlight the needs of South Pacific island nations, namely, the need for greater information and awareness about climate change, involvement in the planning and decision-making process, and financial and technical assistance to strengthen mitigation and adaptation programs. The primary limitation of these instruments is their minimal ability to influence action on the part of industrialized nations during international climate negotiations.

**B. International Refugee Law and Human Displacement**

The 1951 United Nations Convention relating to the Status of Refugees ("Refugee Convention") is the primary instrument for international refugee protection. The Refugee Convention defines a refugee as “someone who is unable or unwilling to return to their country of origin owing to a well-founded fear of being persecuted for reasons of race, religion, nationality,
membership of a particular social group, or political opinion.” Although the Refugee Convention was originally developed to protect refugees related to the events of World War II in Europe, the 1967 Protocol gave it universal coverage. The Refugee Convention is both a status-based and rights-based instrument with the underlying principles of non-discrimination as to race, religion, or country of origin; non-penalization for illegal entry or stay; and non-refoulement, which means that no refugee may be forced to return to a territory where he or she fears threats to life or freedom. The Refugee Convention also establishes basic minimum standards for the treatment of refugees to include certain rights, such as access to courts, employment, education, travel documents, and some social security. Thus, the emphasis of the Refugee Convention is on providing humanitarian aid for individuals facing persecution. The definition of “refugee” as it exists excludes those persons displaced due to climate change. The U.N. High Commission on Refugees (UNHCR) gives nations discretionary leave to allow refugees to stay on humanitarian or compassion grounds, but has not taken a specific stance on the legal status of climate change displaced persons. The key legal and policy question is whether climate change related displacement can be characterized as a violation of civil, political, and environmental rights that trigger the obligations of non-discrimination, non-penalization, and non-refoulement. The UNHCR addressed the issues of climate change, rights, and displacement at a meeting held in April 2011. It concluded that “the planned relocation of whole populations or communities may in some cases be necessary” and that “[a]ny relocation plans need to ensure the enjoyment of the full range of relevant rights and a secure status for those relocated.” These relevant rights include the right to access information about the reasons and procedures for movement, to participate in the planning and management of

54. Id.
55. Id. at 20–30.
57. Id. at 44.
the movement, to practice one’s own culture and traditions, and to enjoy their rights to life, dignity, liberty, security, and self-determination.”

C. Sustainable Development, Intergenerational Rights, and Environmental Governance

The 1972 U.N. Conference on the Human Environment in Stockholm declared that man has a “fundamental right to freedom, equality, and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations.” Principle 11 of the Stockholm Declaration states that “[t]he environmental policies of all States should enhance and not adversely affect the present or future development of developing countries.” The Stockholm Declaration urges the international community to “take into account the circumstances and particular requirements of developing countries” and to develop “international law regarding liability and compensation for victims of pollution and environmental damage.” The International Court of Justice (ICJ) echoed this sentiment in its Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons: “[T]he environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn.”

Currently, international law does not offer standing to future generations, nor is there any treaty that refers to a right to a “decent” environment. The 1987 World Commission on Environment and Development created the universal definition of sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their needs.” The Earth Summit held in Rio de Janeiro in 1992 established Agenda 21, which has been lauded as “the most important step yet taken toward environmental rights protection.” The Summit committed to guaranteeing the “right of every person of present and future generations to live in an environment adequate

59. Id. at 8.
60. Gillespie, supra note 21, at 122–23.
61. Jarvis, supra note 24, at 456.
62. Id.
63. Gillespie, supra note 21, at 123.
64. Id. at 123–124.
to his or her health and well-being.” Principle 6 of the Rio Declaration recognized “[t]he special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable,” and that such countries should be given “special priority.” Principle 7 established the important principle of “common but differentiated” responsibilities, which are based on differing contributions to environmental degradation. Additionally, Principle 15 established the precautionary principle, where “lack of scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.” Thus, the right to an environment that meets the needs of present and future generations and the obligation of developed nations to help developing nations achieve sustainable development are well-established policy goals, but the Principles lack adequate implementation and enforcement mechanisms.

The Global Conference on the Sustainable Development of Small Island Developing States (SIDS) was held in Barbados in 1994 and was the first global conference on sustainable development for the purpose of implementing Agenda 21. The Barbados Program of Action (“Barbados Program”) recognized that “while small island developing States are among those that contribute least to global climate change and sea level rise, they are among those that would suffer most from the adverse effects of such phenomena.” The Barbados Program also recognized that South Pacific developing nations have a limited capacity to respond to and recover from such disasters and therefore need financial and technical assistance under the UNFCCC for mitigation and adaptation efforts. Part Two, Section I of the Barbados Program declares that:

Based on the principle of the right to development, small island developing States should . . . endeavor to achieve the goals of sustainable development by . . . formulating and implementing policies, strategies and programs that take into account development, health and environmental goals, strengthening national institutions, and mobilizing

67. Id.
68. Jarvis, supra note 24, at 456.
69. Id.
70. Id.
71. Programme of Action, supra note 21, at 4.
all available resources . . . aimed at improving the quality of life.\textsuperscript{72}

Essentially, the environmental, economic, and political vulnerability of the PSIDS limit their ability to pursue a path of sustainable development on their own terms. In 2002, the World Summit on Sustainable Development (WSSD) promoted the idea of good environmental governance, which includes sound economic policies, solid democratic institutions responsive to the needs of people, and improved infrastructure as essential for sustainable development.\textsuperscript{73} Other essential aspects of good environmental governance include freedom, peace and security, domestic stability, respect for human rights, rule of law, gender equality, market-oriented policies, a commitment to just and democratic societies, and the right to development.\textsuperscript{74} Good environmental governance is exactly what the PSIDS need from the international community for the purpose of strengthening their own domestic environmental governance.

\textit{D. Climate Justice and the Duty of Developed Nations}

The multiple vulnerabilities facing the PSIDS and their inability to address them without depending on the very nations that caused their current predicament are at the heart of climate injustice. The U.N. Non-Governmental Liaison Service issued a book entitled \textit{Climate Justice for a Changing Planet: A Primer for Policy Makers and NGOs}, describing climate justice as building on a “platform of equitable development, human rights, and political voice.”\textsuperscript{75} In the international realm, climate justice arguably has reached the “degree of relevance” where governmental authorities should establish the normative statement as an explicit policy goal.\textsuperscript{76} For example, in 1998 the Aarhus Convention declared its objective to be the “protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-

\textsuperscript{72} \textit{Id.} at 5.
\textsuperscript{74} \textit{Id.}
being,” and that each Party “shall guarantee the rights of access to information, public participation in decision-making, and access to justice in environmental matters.”

Several years later, the Barbados Program made explicit reference to the inherent injustice arising from the fact that the States which contribute the least to anthropogenic climate change suffer most from its effects, while those same States have the least capability to adapt to such effects. Global climate change reveals the disparities and inequities of resources, development paths, and emissions contributions between rich and poor nations. Climate justice has emerged as a way of encapsulating aspects of justice, human rights, effectiveness, and efficiency to reduce these disparities and create a sustainable planet.

International climate treaties thus far only suggest moral and legal responsibilities to assist the PSIDS in their adaptation efforts; there are no binding commitments or methods of enforcement that can guarantee adaptation assistance, including relocation, in the pursuit of climate justice. Understanding climate change displacement in the context of climate justice is important because developed nations, as the primary drivers of climate change, owe developing nations a duty to internalize the burdens created by the adverse effects of climate change by mitigating greenhouse gas emissions and compensating developing nations by providing them with appropriate financial and technical assistance.

III. CLIMATE DISPLACEMENT POLICY CHALLENGES FOR THE PSIDS

The threat of climate change displacement facing the PSIDS is the result of both environmental degradation and a failure of governance from the regional to the international level to “heed the warnings of science and the voices of the vulnerable.” In an address to the Royal Commonwealth Society, the former President of the Republic of Maldives classified efforts to stabilize the climate as a series of “failed promises and missed opportunities.” The failure of governance at both the regional and

78. Programme of Action, supra note 21, at 5.
79. ADAMS & LUCHSINGER, supra note 75.
81. Id.; Maumoon Abdul Gayoom, President of the Republic of Maldives, Address at the Royal Commonw. Soc’y: Is There a Right to a Safe Environment? 4 (July 17, 2007), available at
international levels to take precautionary measures and limit greenhouse
gas emissions highlights the inequality and injustice of the situation facing
the Carterets and other South Pacific island nations. Three main features of
this inequality and injustice include (1) the disproportionate accumulation
of greenhouse gas emissions by the few at the expense of the many; (2) the
delayed effects of climate change such that the harmful effects of present
development and growth will be experienced by future generations; and (3)
the asymmetrical impacts of climate change, where the poor and those
living in developing countries will experience far worse consequences than
the wealthy and those living in developed countries. These three features
result in a climate of injustice whereby the wealthy, industrialized countries
were able to develop by indiscriminately burning fossil fuels and producing
greenhouse gas emissions so that the majority of the world’s population,
currently experiencing poverty and underdevelopment, must develop in a
climate of limited resources and remain within sustainable limits. The
fundamental ethical question for policy development in this current climate
of injustice is whether humanity has an obligation toward the estimated
millions who will be displaced due to climate change and sea level rise.

The obligation to act on behalf of climate change displaced persons
poses three primary policy challenges for the PSIDS. Their first challenge is
gaining recognition under international law of their people as either climate
“refugees” or some similar, new designation. The second challenge is their
administrative, technological, and financial incapacity to develop and
implement mitigation and adaptation strategies. The third challenge is the
general lack of acknowledgment, in both a normative and legal sense, of the
fundamental right to live and develop in a healthy and sustainable
environment.

A. Recognition

The debate concerning the existence, numbers, and characteristics of
climate change displaced persons raises the following key issues: whether
such persons constitute an identifiable or distinguishable category; whether
it is possible to predict the number and distribution of persons displaced by
climate change; whether such persons require a distinct definition, and if so
how they should be defined. The term “ecological refugee” was first defined by Essam El-Hinnawi in an U.N. Environmental Program (UNEP) report in 1985 as “those people who have been forced to leave their traditional habitat, temporarily or permanently, because of a marked environmental disruption (natural and/or triggered by people) that jeopardized their existence and/or seriously affected the quality of their life.”

Ecological refugees tend to fall into three main categories: (1) “people temporarily displaced due to a temporary environmental stress but who return once the area has been rehabilitated;” (2) people “permanently displaced who have resettled elsewhere due to permanent environmental change;” and (3) “people who have migrated (either temporarily or permanently) in search of a better quality of life as a result of progressive degradation of environmental resources.” However, such refugees do not meet the “well-founded fear of being persecuted” standard required under the 1951 Refugee Convention.

A key legal and policy question for the international community is whether the definition should be expanded to include climate-displaced persons or whether a new convention should be created. Incorporating “environmental” into the definition of “refugee” is controversial because a direct causal link between climate change—as something independent from political and economic changes—and displacement is not easily discernible. The impetus to respond to the needs of climate-displaced persons is thus susceptible to being lost in a semantic debate with no clear answer.

Several scholars argue that the global nature of the climate change problem and the unique characteristics of persons displaced by climate

86. Docherty & Giannini, supra note 43, at 363 (“Environmental disruption” is defined as any physical, chemical and/or biological changes in the ecosystem (or the resource base) that render it temporarily or permanently unsuitable to support human life.).
88. See Docherty & Giannini, supra note 43, at 393–94 (articulating that the Convention does not explicitly cover victims of environmental displacement, but rather focuses on individuals with a “well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion.”).
change require recognition apart from the Refugee Convention.\(^91\) Since nearly every person and every country emits at least some greenhouse gases, and these greenhouse gases circulate and impact the entire globe regardless of where they originated, the international community is needed to respond to the multivariate impacts of global climate change. Climate change refugees may be viewed as distinct from traditional political, economic, or war refugees because the international community, in contrast to a country, is responsible for aiding them.\(^92\) Climate change refugees also differ from traditional refugees because they may be (1) unable to return to their homes; (2) likely to migrate in large numbers as a collective group; and (3) are somewhat predictable given the slow onset of some climate change impacts.\(^93\)

The international community has attempted to define a climate change refugee or climate change displaced person. For example, the International Organization for Migration (IOM) defines climate change displaced persons as:

> Persons or groups of persons who, for compelling reasons of sudden or progressive changes in the environment as a result of climate change that adversely affect their lives or living conditions are obliged to leave their habitual homes, or choose to do so, either temporarily or permanently, and who move either within their own country or abroad.\(^94\)

A draft proposal for a Convention on the International Status of Environmentally-Displaced Persons defines “environmentally-displaced persons” as “individuals, families, and populations confronted with a sudden or gradual environmental disaster that inexorably impacts their living conditions, resulting in their forced displacement from their habitual residence.”\(^95\) The definition created by Frank Biermann and Ingrid Boas includes “people who have to leave their habitats, immediately or in the near future, because of sudden or gradual climate changes such as sea level

\(^{91}\) See Docherty & Giannini, supra note 43, at 393–94 (arguing that the Refugee Convention is too restrictive to embrace essential components of the climate change refugee instrument); Biermann & Boas, supra note 6.

\(^{92}\) Docherty & Giannini, supra note 43, at 367.

\(^{93}\) Biermann & Boas, supra note 6, at 75.

\(^{94}\) KNIETON ET AL., INT’L ORG. FOR MIGRATION, CLIMATE CHANGE AND MIGRATION: IMPROVING METHODOLOGIES TO ESTIMATE FLOWS 31 (2008).

rise, extreme weather events and drought and near scarcity." Another definition proposed by Bonnie Docherty and Tyler Giannini encompasses persons experiencing forced migration, temporary or permanent relocation, movement across national borders, disruption consistent with climate change, sudden or gradual disruption, and a “more likely than not” standard for human contribution to the disruption.

However valuable these discussions over the causal nexus between climate change and human displacement, and the necessary elements of a new definition for persons displaced by climate change, basing policy responses and actions on an ambiguous, semantic debate can be dangerous. Indeed, waiting for a clear definition is neither an effective nor just strategy for addressing the needs of climate change displaced people. Walter Kalin writes in “The Climate-Change-Displacement Nexus”:

We should not be distracted by semantic discussions with little practical meaning about whether to call affected persons ‘climate change refugees,’ ‘environmental migrants,’ or something else. Instead, what is needed is a thorough analysis of the different contexts and forms natural disaster induced displacement can take.

At the same time, moral responsibility and enforceable, legal liability for the aid and welfare of climate refugees is generally lacking in part because recognition of climate refugees is lacking. Yet there exists a “strong moral connotation” for societal protection that should be afforded to persons forced to leave their homes and relocate across national borders due to climate change. One of the more flexible approaches to recognition for climate-displaced persons would identify climate refugees along a graduated scale to allow for differing degrees of protection depending on the severity of the situation.

96. Bierman & Bras, supra note 6, at 67.
99. Bierman & Bous, supra note 6, at 74-75.
100. See id., at 67.
101. Williams, supra note 87, at 522.
The PSIDS depend on the surrounding sea for their subsistence and livelihood, and they depend on the existence of island territory for economic, political, social, and cultural viability. Without the help of the international community, the adaptive capacity of the PSIDS to respond to a changing climate is limited when rising sea levels, storm surges, floods, and drought impact the people’s ability to produce food, access fresh water, operate the tourist industry, or maintain a home and practice cultural traditions. However, the international response thus far has been slow and ineffective, pushing the PSIDS to pursue legal strategies as a last, desperate call for assistance.102

In an attempt to increase their collective presence during international climate negotiations, a number of low-lying, small island developing states formed the Alliance of Small Island States (AOSIS) in 1990.103 AOSIS is recognized as a group with first speaking rights in the UNFCCC due to their most vulnerable status.104 In 2009, the AOSIS signed a Declaration on Climate Change, which voiced its concerns over the effects of climate change on its countries and its disappointment in the lack of progress being made at the international level.105 The Declaration called on the international community to address climate change immediately.106 In June 2009, the SIDS also introduced a draft resolution expressing their deep concern and urging the U.N. to intensify its efforts to address climate change.107 Unfortunately, the COP 15 Copenhagen Declaration declined to make any of the changes called for by AOSIS and the SIDS and directed Annex I countries to implement their non-binding emissions targets by 2020.108 By 2020, however, the Carterets may already be underwater, and

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102. See U.N. GAOR, 66th Sess., 16th plen. mtg. at 27-28, U.N. Doc. A/66/PV.16 (Sept. 23, 2011) (citing Joseph Toribiong, President of Palau, calling upon the U.N. General Assembly to seek an advisory opinion from the International Court of Justice on the “responsibilities of States under international law to ensure that activities emitting greenhouse gases that are carried out under their jurisdiction or control do not damage other States”).


104. Gillespie, supra note 21, at 120.

105. Alliance of Small Island States, supra note 7.

106. Id.


the international community will be faced with yet another tragic failure of inaction.109

Financial capacity is another major limiting factor for developing nations trying to adapt to the adverse impacts of climate change. The estimated price for sustainable development in the Third World was $625 billion per year; however, developed nations have delivered less than one-fifth of that promise.110 SIDS are “at the front of the queue” for financial assistance for capacity building and are the primary beneficiaries of a fund to help develop National Adaptation Programs of Action (NAPAs).111 Despite these mechanisms for financial assistance, external factors threaten their effectiveness, such as a lack of coordination among donor-funded programs and donor-driven preferences taking precedence over local implementation and community-based development needs.112 A more effective funding model may be a Climate Refugee Protection and Resettlement Fund, where communities direct the planning, regulation, and implementation of adaptation programs.113

C. Human Rights Approach

The lack of recognition of climate change displaced persons under the Refugee Convention and their limited capacity to adapt to displacement raises some issues concerning the rights of climate-displaced persons. There is a recognized duty of each nation to protect the right to life of its people, which includes the right of displaced persons to remain or relocate.114 Beyond the fundamental right to life lie other human rights such as access to humanitarian assistance, education, employment, protection from violence, and restitution or compensation for lost property.115 Displacement caused by climate change raises the question of whether there should be a right to develop in a stable, healthy, and sustainable environment that spans across generations. The right to develop should promote long-term human and economic viability in a socially, economically, and environmentally

110. ROBERTS & PARKS, supra note 1, at 3.
112. Dr. Justin Rose, Domestic Legal Implications of Climate Change in Pacific Island Countries, presentation at the Threatened Nations: Legal Implications of Rising Seas and a Changing Climate Conference 10 (May 23-25, 2011) (powerpoint presentation).
113. Id. at 4.
114. UNHCR Summary of Deliberations, supra note 58, at 9.
115. Id. at 8.
sustainable manner. The right to climate stability poses sustainability as a moral and legal obligation to future generations. The right to develop should also promote climate justice while limiting greenhouse emissions by imposing on all nations a negative duty to refrain from emitting greenhouse gases and a positive duty to assist developing countries in human and economic development.

Attempts to move the climate change policy debate in the human rights direction have already begun among the indigenous communities of the United States. On December 7, 2005, Sheila Watt-Cloutier, an Inuk woman and Chair of the Inuit Circumpolar Conference, submitted a petition to the Inter-American Commission on Human Rights (IAHCR) on behalf of all Inuit of the United States and Canada seeking relief from “violations resulting from global warming caused by acts and omissions of the United States.” The petition argued on the argument that the United States, as the world’s largest emitter of greenhouse gases, bore the greatest responsibility for causing global warming, which violated the Inuit’s fundamental human rights as protected by the American Declaration of the Rights and Duties of Man and international law. The petition emphasized that Inuit culture is inseparable from its physical surroundings and the environmental degradation caused by climate change violated Inuits’ right to practice their subsistence way-of-living and cultural identity. Since most Inuit settlements are located in coastal areas, they are vulnerable to storm surges, permafrost melt, and erosion, which threaten the very existence of their culture. The petition requested that the Commission order the United States to “[a]dopt mandatory measures to limit its emissions of greenhouse gases and cooperate in efforts of the community of nations . . . to limit such emissions at the global level.” The IAHCR rejected the petition in November 2006, stating “the information provided does not enable us to determine whether the alleged facts would tend to characterize a violation

116. VANDERHEIDEN, supra note 66, at 251.
117. Id. at 250.
119. Id. at 5. These rights include the “rights to the benefits of culture, to property, to the preservation of health, life, physical integrity, security, and a means of subsistence, and to residence, movement, and inviolability of the home.”
120. Id.
121. Id. at 7.
of rights protected by the American Declaration.”122 Following the rejection, the Commission agreed to hold a hearing at the request of the petitioners to “acquire a better understanding of the relationship between global warming and human rights.”123 While neither the petition nor the hearing forced immediate action from the U.S., the petition is significant in its attempt to connect global climate change and human rights.124 As Rebecca Tsosie writes in “Indigenous People and Environmental Justice: The Impact of Climate Change”:

We must open our collective minds to a notion of justice that is truly intercultural in nature. Such a notion of justice must incorporate an indigenous right to environmental self-determination that allows indigenous peoples to protect their traditional, land-based cultural practices regardless of whether they also possess the sovereign right to govern those lands or, in the case of climate change, prevent the practices that are jeopardizing those environments.125

The Inuit in the Arctic and the Carteret islanders in the South Pacific face a similar fate of permanent displacement and an inability to practice their subsistence cultural identity. Even though the Inuit were unsuccessful in proving a violation of the American Declaration of the Rights and Duties of Man, there are several international treaties that strengthen the link between climate change and human rights. The 1972 Stockholm Declaration introduced the concept of the human environment, where man’s well being is dependent on a natural environment that supports the full enjoyment of human rights. Two existing principles of international human rights law incorporate this concept: the International Covenant on Civil and


124. See Petition to the Inter-American Commission, supra note 118, at 6 (arguing that impacts of climate change, caused by acts and omissions by the United States, violate fundamental human rights protected by the American Declaration of the Rights and Duties of Man and other international instruments).

Political Rights, which guarantees the right to life, freedom of movement, and choice of residence; and the International Covenant on Economic, Social, and Cultural Rights, which guarantees the right to livelihood, food, water, housing, health, and an adequate standard of living. The 2001 report by the International Commission on Intervention and State Sovereignty established the “responsibility to protect” (R2P) principle, which assigns responsibility to the international community to protect the citizens of a sovereign state from catastrophe if the state fails to live up to this obligation. The R2P principle typically applies to situations of mass murder, rape, and starvation and has not yet become accepted as customary international law; however, some argue that it should be expanded to include natural disasters and climate displacement. More recently on November 14, 2007, SIDS adopted the Malé Declaration on the Human Dimension of Climate Change. For the first time in an international agreement, this Declaration stated that “climate change has clear and immediate implications for the full enjoyment of human rights,” including “the right to life, the right to take part in cultural life, the right to use and enjoy property, the right to an adequate standard of living, the right to food, and the right to the highest attainable standard of physical and mental health.” Additionally, the Malé Declaration called on the U.N. to “address the issue as a matter of urgency.”

Following the Malé Declaration, the U.N. Human Rights Council adopted two notable Resolutions relating human rights and climate change. Resolution 7/23 states that climate change poses an immediate and far-reaching threat to people and communities around the world and has

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128.  *Id.* citing Jarrod Wong, *Reconstructing the Responsibility to Protect in the Wake of Cyclones and Separatism*, 84 TUL. L. REV. 219, 222 (2009)).
130.  *Id.*
131.  *Id.*
implications for the full enjoyment of human rights. The Resolution called for a study of the relationship between human rights and climate change. The study found that climate change interferes with human rights and that States have obligations under human rights law as well as an ethical imperative to mitigate and adapt to climate change. Resolution 10/4, adopted in March 2009, recognized that climate change related impacts have both direct and indirect implications for the effective enjoyment of human rights, including the right to life, adequate food, the “highest attainable standard of health,” adequate housing, self-determination, safe drinking water, and sanitation. The Resolution also recognized that those in vulnerable situations will feel these implications most acutely due to factors such as “geography, poverty, gender, age, indigenous or minority status, and disability.” In December 2010, having noted Resolution 10/4, parties to the UNFCCC and Kyoto Protocol included in the Cancun Long-term Cooperative Action (Cancun LCA) language that admonished parties to “fully respect human rights” and “protect the participatory rights of affected individuals and peoples in decision-making processes.”

Using these resolutions and principles of international law to "humanize climate change" functions to: (1) emphasize the importance of equality and non-discrimination in the policy arena; (2) draw attention to the lack of a specific right to a safe and secure environment; (3) emphasize the difficulty of applying transnational human rights; and (4) raise questions about accountability for human rights violations caused by transnational environmental degradation. The Office of the High Commissioner for Human Rights (OHCHR) has stated that “international cooperation to tackle climate change is not only expedient but also a human rights obligation.” An international instrument that incorporates human rights for climate change displaced persons should include an explicit right to a

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135. Id.
137. Limon, supra note 129.
138. Id.
healthy environment, the right to move or stay, the right to information and participation in the movement process, and all the rights common to inter-state and internally-displaced persons.\footnote{Bétaille et al., supra note 95, at 399–401 (noting rights common to inter-state and internally displaced persons include the right to assistance, water, subsistence food aid, health care, juridical personality, civil and political rights, housing, return to homeland, family, work, education and training, cultural specificity, and nationality).}

\section{IV. Meeting theneeds of South Pacific Island Nations Facing Climate Change Displacement}

For the PSIDS, the prospect of climate-induced migration and permanent displacement has serious legal, political, and ethical implications that are not addressed by current legal and policy frameworks. The “legal vacuum” created by the lack of legal recognition, definition, or protection in international law for climate-displaced persons must be addressed because, even if greenhouse gas concentrations were to stabilize at current levels, the long time-scales associated with thermal expansion of the oceans means the earth is due for centuries of rising sea levels and potentially millions of climate-displaced persons.\footnote{IPCC, supra note 13, at 16.} However, such legal discussions must involve the voices of those vulnerable to climate change displacement and treat the PSIDS as places worth preserving, not abandoning.\footnote{H.E. Marlene Moses, Permanent Rep. of Nauru, Statement on Behalf of the Pacific Small Island Developing States (PSIDS), Address Before the United Nations Youth Delegates (Oct 13, 2009), http://pacificsids.org/statements/2009-2010/20091013.pdf.} In the words of H.E. Ambassador Marlene Moses, Permanent Representative of Nauru and Chair of the PSIDS: “[u]nder no circumstances can efforts to protect climate-displaced people be used as an excuse for inaction on mitigation and adaptation. Climate migration cannot be seen as a safety valve for a failure in political will . . . . Our survival is not negotiable.”\footnote{Id.} In order to address the unique needs and policy challenges posed by climate change in the South Pacific, vulnerable populations have utilized four main strategies: mitigation, adaptation, migration, and litigation.

\subsection{A. Mitigation}

Mitigation seeks to address the causes of climate change and is defined as “human intervention to actively reduce the production of greenhouse gas emissions . . . or to remove the gases from the atmosphere.”\footnote{TOMPKINS, supra note 14, at 34.}
island nations collectively contribute less than one percent to the world’s total greenhouse gas emissions, mitigation efforts must occur primarily in developed nations on behalf of developing countries.\textsuperscript{144} However, as developing countries pursue a path of sustainable development, efforts to mitigate the production of greenhouse gas emissions must be considered. For example, former President Nasheed declared that the Maldives will be the first carbon neutral country by 2020.\textsuperscript{145} Even though the Maldives is one of the most vulnerable developing nations, its government recognizes that sustainable development through carbon neutrality is necessary for the nation’s future.\textsuperscript{146} Given their comparably large carbon footprint, developed nations need to make a similar commitment to reduce greenhouse gas emissions, not just for the sake of national development, but for the sake of sustainable development of the global community. The adverse effects of climate change are international in scope; hence, mitigating its causes is the common, but differentiated responsibility of the international community.

\textit{B. Adaptation}

Due to the already accumulated greenhouse gases in the atmosphere and the long time-scale for thermal expansion of the oceans, the earth is committed to global warming and rising sea levels that mitigation efforts alone cannot address.\textsuperscript{147} Even though all of the negative impacts of climate change cannot be prevented, human society can improve the “efficiency and effectiveness” of its responses to them.\textsuperscript{148} Adaptation aims to minimize the consequences of climate change, and is defined as “adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.”\textsuperscript{149} Adaptive capacity refers to “the regenerative ability of ecosystems and their capability in the face of change to continue to deliver resources and ecosystem services that are essential for human livelihoods and societal

\textsuperscript{144} Id. at 36.


\textsuperscript{146} Id.


\textsuperscript{148} Id. at 16.

\textsuperscript{149} WORKING GROUP II TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: IMPACTS, ADAPTATION AND VULNERABILITY 6 (M.L. Parry et al. eds., 2007).
The overall goal of adaptation law should be to increase the adaptive capacity of the natural, human, and societal ecosystems. Increasing adaptive capacity includes conducting a vulnerability assessment and developing an adaptation strategy. A vulnerability assessment involves identifying in a particular area or country the type of climate hazard, the level of exposure and sensitivity, and the area’s ability to cope. Based on vulnerability assessments, an adaptation strategy determines who bears responsibility for the development and enforcement of risk management plans. The strategy also requires links with other planning processes, education and communication, support networks, science, and financing. The three main goals of an adaptation strategy are to provide the affected population with a place to live, to keep families together, and to protect cultural practices. Climate change adaptation law must be both flexible when dealing with climate change impacts and committed to precautionary regulation. In other words, adaptation law must be able to respond to local impacts while remaining consistent with global ecological and social goals. Any adaptation strategy must balance the interests of the decision-makers, the risk-bearers, and the cost-bearers for the following reasons: those who decide are often removed from the risk, those who bear the risk are often excluded from the decision-making process, and those who pay often do not face the risk.

There are some existing frameworks in international law that address adaptation strategies. The UNFCCC created the National Adaptation Programmes of Action (NAPAs) with funding from the Global Environment Facility (GEF). Countries may stipulate their immediate needs to adapt to the pressing challenges posed by climate change through NAPAs and request funding for technical support and project-specific funding. The NAPA program is only available to the 49 identified least developed countries (LDCs) and involves an eight-step application process. As of

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151. Craig, supra note 145, at 10.
152. Tompkins, supra note 14, at 43.
153. Id. at 50.
154. Id. at 52.
155. Jarvis, supra note 24, at 461.
156. Craig, supra note 145, at 9.
157. Id. at 17.
158. Tompkins, et al., supra note 14, at 52.
160. Id.; Lange, supra note 127, at 636.
161. See NAT’L ADAPTATION PROGRAMME OF ACTION, supra note 159.
February 2011, 45 LDCs have submitted NAPAs, including the South Pacific nations of Kiribati, Maldives, Tuvalu, Vanuatu, Samoa, and the Solomon Islands.\textsuperscript{162} Holly D. Lange suggests that a new treaty regime, independent of the UNFCCC and based on the NAPA model, is needed to meet the needs of populations permanently displaced by climate change.\textsuperscript{163} This is especially true in terms of funding and local stakeholder participation in order to provide for adequate relocation assistance and land rights provisions.\textsuperscript{164} The scope of the NAPA program would need to be expanded from short-term projects to permit permanent land rights, allow for long-term assistance for gradual climate changes, and offer some assistance to host countries—even if they fall outside the LDC category.\textsuperscript{165}

In sum, the focus of climate change displacement policy needs to shift from mitigating the causes of climate change to adapting to its negative effects. An effective adaptation strategy must strengthen the adaptive capacity of developing nations, have “principled flexibility” that meets general human rights obligations as well as the specific needs of local populations, and engage multiple stakeholders from the local to the international level. To accomplish this, Benjamin Sovacool draws a distinction between “hard” and “soft” climate adaptation paths.\textsuperscript{166} While a “hard” adaptation path relies predominantly on technology and infrastructure that is capital-intensive, large, complex, and inflexible, a “soft” adaptation path prioritizes natural capital, community control, simplicity, and appropriateness in order to address the “locally and contextually specified nature of climate change.”\textsuperscript{167}

“Hard” and “soft” adaptation paths are not necessarily mutually exclusive. Depending on the time frames, scales, and goals of particular projects or measures, an optimal adaptation policy for a particular nation or community may involve elements of both.\textsuperscript{168}

\textit{C. Relocation}

Relocation strategies involve a number of technical and rights-based issues. Technical issues include, but are not limited to: securing new

\begin{itemize}
  \item Id.
  \item Id., supra note 127, at 638.
  \item Id.
  \item Id. at 639.
  \item Id. at 1179 (citing J. Ayers & T. Forsyth, \textit{Community-based Adaptation to Climate Change: Strengthening Resilience Through Development}, 51 ENVIRONMENT 4, 22–31 (2009)).
  \item Id. at 1182.
\end{itemize}
territory, determining the sovereign status of the displaced nation, providing social security, employment, and health services for the displaced population, and protecting the rights of the host community. The rights of climate change displaced persons include the right to remain and re-enter the new country, to maintain cultural identity and social traditions, and to sustainable development. Sujatha Byravan and Sudhir Chella Rajan argue that relocation should be viewed as an adaptation strategy because ignoring potential victims until they are permanently displaced is “morally indefensible as well as impractical.” In *The Ethical Implications of Sea Level Rise due to Climate Change*, the authors propose that the fairest solution is to grant those who will be displaced by rising sea levels the individual right to migrate to safe countries and that there should be an international treaty to find potential migrants homes in advance of displacement.

1. Land Purchase Programs

One relocation strategy is to purchase land elsewhere and essentially create a new homeland. Former Maldivian President Nasheed created a sovereign wealth fund for the purpose of purchasing a large parcel of land from another country and relocating the entire Maldivian population so that the Maldives may retain its sovereign status in another location. President Nasheed stated that while Maldivians do not want to leave their homeland, they also “do not want to be climate refugees living in tents for decades.” President Anote Tong of Kiribati declared relocation necessary and urgent, and that adequate land rights must be incorporated into the international response to ensure successful relocation. In *Sinking Nations and Climate Change Adaptation Strategies*, Ryan Jarvis argues that those countries with the highest historic pollution levels should help provide land and compensate the cost of relocation. However, major political problems exist with this approach such as: (1) getting countries to accept responsibility for historic emissions; (2) determining the sovereign status of

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171. *Id.*
172. *Jarvis, supra* note 24, 469.
173. *Id.*
175. *Jarvis, supra* note 24, at 472–475.
newly relocated populations and nations; and (3) identifying the type, location, and amount of land that should be allocated.176

2. Bilateral and Regional Adaptation and Relocation Programs

One bilateral agreement, the U.S.-Kiribati Friendship Treaty, and two regional programs, the Pacific Access Category (PAC) and the South Pacific Region Environment Program (SPREP), offer valuable lessons for strengthening adaptive capacity in the South Pacific and provide the possibility of relocation. The U.S.-Kiribati Friendship Treaty was signed in 1979 and relinquished U.S. claims to Kiribati’s Phoenix and Line Islands.177 Article 2 of the Friendship Treaty states that the U.S. will provide collaborative assistance to Kiribati “on matters of mutual concern and interest in time of need” and could include aid for relocation.178 The Friendship Treaty has never been tested in a legal sense, so there is the possibility that similar treaties that specifically detail assistance for climate displacement could be developed.179

The Pacific Access Category (PAC) was created in 2004 and permits an annual quota of seventy-five citizens from Tuvalu and Kiribati and 250 from Tonga and Fiji, plus their partners and dependent children, to settle in New Zealand.180 Qualified citizens must meet basic residence requirements, be between eighteen and forty-five years of age, have an acceptable offer of employment in New Zealand, and meet a minimum level of English proficiency.181 Thus, the PAC remains a limited and structured migration program rather than a program to address climate-displaced persons.

The South Pacific Region Environment Program’s (SPREP) mandate is “to promote cooperation in the Pacific Islands region and to provide assistance in order to protect and improve the environment and to ensure sustainable development for present and future generations.”182 The SPREP has twenty-one Pacific island member countries as well as France, Australia, New Zealand, and the United States that have chosen to focus their efforts on: (1) strengthening meteorological services; (2)

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176. Id. at 462–475.
178. Id.
179. Lange, supra note 127, at 630.
181. Id.
understanding climate change variability and sea level rise; (3) analyzing vulnerability; and (4) developing adaptation and mitigation response measures. The SPREP Secretariat’s 2009 annual report detailed some important regional success stories in the areas of ecosystem management, waste and pollution management, environmental governance, and communications education and knowledge. In the environmental governance category, a major focus of the Secretariat was mainstreaming environmental concerns into Pacific island nations’ National Sustainable Development Strategies (NSDS), which are coordinated and implemented with the help of a voluntary association of regional and international development organizations. So far, Nauru has revised its 2005–2025 NSDS to focus on sustainable management of its natural resources and Niue has developed a national climate change policy. In addition, SPREP held in-country training sessions to conduct environmental impact assessments that the nations may use as decision-making tools for environment and development planning.

Another major success story in the environmental governance category came through financial support from the Global Environment Facility (GEF), which provides grants to developing countries for projects related to climate change and other global environmental issues. Between the establishment of GEF in 1991 to 2006, Pacific island nations have received a disproportionately small amount of financial support compared to their potential to “generate global environment benefits and contribute to their environmentally sustainable benefit.” However, since the establishment of the Pacific Alliance for Sustainability program (GEF-PAS) in 2007, Pacific island nations have managed to secure nearly $100 million in funding for national and regional projects, with approximately forty-five million dollars going towards climate change adaptation and mitigation. Finally, in the communications education and knowledge category, SPREP created a Pacific Environment Information Network (PEIN) to act as a clearinghouse for climate change resources.

183. Id.
185. Id. at 35.
186. Id.
187. Id. at 36.
188. Id. at 37.
189. Id.
190. Id. at 39.
In summary, climate change related displacement will most likely necessitate more treaties and relocation programs between home and host nations. However, such treaties and programs must have a broader mandate than the PAC and provide for the specific humanitarian needs and human rights of the displaced. The SPREP demonstrates the strength of regional level action to improve climate change mitigation, adaptive capacity, technology development, education and information exchange, and public participation. One possible relocation program may be created within the framework of the SPREP, which would provide access to resources and support from a wide variety of development-related institutions from the local to international level. In addition, the SPREP can offer guidance for South Pacific nations that seek to include a relocation program as part of their NSDS.

**D. Litigation**

South Pacific island nations could use litigation to draw attention to, and force action concerning, mitigation, adaptation, and humanitarian aid for climate change displacement. After the U.S. chose not to ratify the Kyoto Protocol in 2005, Tuvalu threatened to bring suit against the U.S. in the International Court of Justice (ICJ) for failing to reduce greenhouse gas emissions that threatened their ability to subsist in their island environment.\(^{191}\) One major legal obstacle Tuvalu would face if such a suit were brought is that the ICJ has never granted prospective relief.\(^{192}\) A second major obstacle would be proving that the U.S. should have reduced its greenhouse gas emissions even without clear scientific proof that its particular emissions, though the highest in the world per-capita, would result in the dire consequences facing Tuvalu. In order for Tuvalu to succeed in such a suit, the nation will have to argue that the precautionary principle is a rule of customary international law, that the U.S. has violated, and that the long term environmental impacts of climate change violate the rights of future generations to a homeland and their traditional way of life.\(^{193}\) In her article analyzing the substantive law issues of Tuvalu’s threat to sue the U.S., Rebecca Jacobs argues that Tuvalu’s best argument would be to use the precautionary principle to extend liability to actions that occur

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192. Id. at 128.
193. Id.
prior to the damage. Thus, the U.S. could be held liable for its policies and actions that contributed to global warming and sea level rise prior to establishing a direct correlation between them. In addition, a rule of “prior restraint” would “create liability for current actions that may cause future damages.”

Professor Eric A. Posner, on the other hand, argues that litigation under international environmental law is not necessarily the most effective approach when it comes to suing for the historical production of greenhouse gas emissions. Posner writes that litigation targeting the U.S. for failing to regulate greenhouse gas emissions will likely fail because of sovereign immunity and suggests that a different legal approach would be to sue under international human rights law. The advantages of suing are that most states belong to human rights treaties and many of the obligations under these treaties have become norms of customary international law. Theoretically, individuals or groups could bring claims against their own state and foreign states in an international tribunal and prevail “if they could show that failure to regulate greenhouse gas emissions has resulted in a violation of their human rights.” Posner points out, however, that greenhouse gases emissions by a state or corporation have limited restrictions in international law; while several international declarations and treaties refer to a right to a healthy environment, they do not create an international human right to a healthy or undamaged environment. Claims against polluters emitting greenhouse gases have the best chance of success if based on the international human rights of life, health, or freedom from discrimination, rather than the right to a healthy environment.

Another option that has not yet been tested in court in the context of climate change is to sue under the Alien Tort Statute (ATS), which permits

194. Id. at 127.
195. Id.
197. Id. at 1927.
198. Id.
199. Id. at 1927–28.
an alien to sue for a tort that was committed in violation of the law of nations.\textsuperscript{202} In \textit{Sosa v. Alvarez-Machain}, the U.S. Supreme Court found that the ATS provides a cause of action for international law violations based on the present day law of nations and “a norm of international character accepted by the civilized world.”\textsuperscript{203} Accepted norms of international character must be alleged to be “specific, universal, and obligatory,” and a court will evaluate each alleged violation of international law separately.\textsuperscript{204} While the specific legal questions raised by a climate change suit brought under the ATS will not be discussed here, theoretically, a PSIDS or the group itself may bring a cause of action under any of the international climate change and human rights laws and principles discussed in previous sections.

The PSIDS may also adopt the strategy used by the indigenous people living in the Oriente region of Ecuador in their class-action suit against Chevron for the adverse environmental and health impacts caused by oil development in the region. After a failed attempt to bring the lawsuit in the United States, the case was tried in Ecuador under domestic environmental law, despite concerns about corruption in the judicial system and the fact that oil revenues comprise one-third of the government’s budget.\textsuperscript{205} On February 14, 2011, Judge Nicolás Zambrano ordered Chevron to pay eighteen billion dollars in damages, the largest judgment ever awarded in an environmental lawsuit.\textsuperscript{206} An appeals court recently upheld Judge Zambrano’s decision, but the entire nineteen-year legal struggle was infused with accusations of fraud, corruption, and misconduct.\textsuperscript{207} This case illustrates that a domestic lawsuit brought by a group of poor and disempowered plaintiffs against a rich and powerful defendant may take years, even decades, to resolve, and is dependent on the legitimacy of the nation’s judicial system and the strength of its environmental and human rights laws.

Litigation may not prove the best route when it comes to providing immediate assistance to climate-displaced persons while simultaneously promoting climate justice, equity, and fairness. Litigation is often lengthy,

\begin{itemize}
\item \textsuperscript{202} Rosemary Reed, \textit{Rising Seas and Disappearing Islands: Can Island Inhabitants Seek Redress Under the Alien Tort Claims Act?} 11 PAC. RIM L. \\ & POL’Y J. 399, 405 (2002); Alien Tort Claims Act, 28 U.S.C. § 1350 (2006).
\item \textsuperscript{204} \textit{Id.} at 732–33.
\item \textsuperscript{205} Patrick Radden Keefe, \textit{Reversal of Fortune}, \textit{THE NEW YORKER}, Jan. 9, 2012, at 41–42.
\item \textsuperscript{206} Naomi Mapstone, \textit{Ecuador Court Upholds $18bn Chevron Ruling}, \textit{FINANCIAL TIMES}, Jan. 4, 2012, http://www.ft.com/cms/s/0/e2404598-367c-11e1-a3f3-00144feabdc0.html#axzz292ShxbJC.
\item \textsuperscript{207} See \textit{id.} (discussing controversies that arose in connection with the \textit{Chevron} suit).
\end{itemize}
requiring financial and technical resources that may be better put toward implementing adaptation strategies. Moreover, litigation does not guarantee results or prospective relief. The question of what sort of relief or damages will adequately address climate justice and sustainable development should be part of the climate change litigation discussion. Posner acknowledges that, “the main purpose of litigation may not be to persuade courts to determine greenhouse gas emission policy, but to attract and pressure governments to reach political solutions, including treaties and domestic laws.” While this model has had some success in the U.S. in terms of tort litigation and anti-smoking policies, Posner thinks it doubtful that such a strategy will work at the international level.

At the same time, the PSIDS are losing patience with the negotiation approach. In a statement to the U.N. General Assembly in September 2011, President Johnson Toribiong of the Republic of Palau noted that in the twenty years since the signing of the United Nations Framework Convention on Climate Change there is still no binding agreement to reduce emissions and address the urgent social, economic, and security threats that climate change poses to the PSIDS. In the interest of determining what international law means in the context of climate change, Palau and the Republic of the Marshall Islands called upon the General Assembly to urgently seek an advisory opinion from the ICJ on “the responsibilities of States under international law to ensure that activities carried out under their jurisdiction or control that emit greenhouse gases do not damage other States.” Despite litigation’s limitations, the urgent need to address climate change impacts in the South Pacific and the stagnation in the policy arena are forcing the PSIDS to consider all possible avenues to safeguard their nations and livelihoods, including litigation.

V. THE INCORPORATION OF CLIMATE JUSTICE AND SUSTAINABLE DEVELOPMENT FOR SOUTH PACIFIC ISLAND NATIONS FACING CLIMATE CHANGE DISPLACEMENT

This paper has thus far demonstrated the unique set of climate change challenges facing the PSIDS and how the current climate change and refugee legal and policy frameworks fail to adequately address the needs of climate change displaced persons. Vulnerable communities have utilized a
variety of strategies to deal with the adverse effects of climate change, including mitigation, adaptation, relocation, and litigation; however, the policy challenges associated with climate change displacement remain unaddressed. The normative principles of equity, fairness, and the right to a healthy, sustainable environment for present and future generations that underlie climate justice and sustainable development can have important implications when incorporated into policy agreements; they generate discussions about causation and responsibility for climate change. At the same time, the key obstacle to incorporating these normative principles into existing or new treaties that address climate change displacement is that they are treated more as guiding, moral principles rather than enforceable legal principles.212

James MacNeill, the former Secretary of the World Commission on Environment and Development, stated that “[p]erhaps the greatest weakness of sustainable development . . . lies in the fact that we have not yet begun to invent a politics to go with the concept.”213 There is currently no international institution responsible for the specific issue of climate change related migration because it involves “several areas of international governance—migration and asylum, the environment, development, human rights, and humanitarian aid and assistance.”214 This section will review what equity and fairness mean for climate change displaced persons in the South Pacific and how the obstacles of proving causation and assigning responsibility for climate change displacement may be addressed.

A. Equity

In the book A Climate of Injustice, J. Timmons Roberts and Bradley C. Parks describe two ways in which inequality drives non-cooperative behavior when it comes to policy-making.215 First is the direct path, whereby “extreme poverty . . . and relative powerlessness” leave many nations “without the capacity to negotiate effectively” and “unable to meaningfully address their emissions of greenhouse gases because of their extremely undeveloped economies and government agencies.”216 Differences in relative income impact the ability of many countries,
including the PSIDS, to attend international conferences, participate in
meetings and organizations, and hire skilled negotiators. Global
inequality inhibits access to data and information necessary to both develop
a strong bargaining position and comply with negotiated agreements. For
example, many of the PSIDS must hire outside consultants, scientists, and
legal aid to help develop NAPAs, greenhouse gas inventories, and
vulnerability and adaptation assessments.

The second way in which inequality creates a non-cooperative policy
environment is when the experience of poorer nations breeds a “generalized
mistrust and polarized expectations about how to proceed on climate
issues.” The Brundtland Report from the World Commission on
Environment and Development in 1987 identified global inequality as a
primary cause of stress on environmental resources and ecological
degradation as a primary cause of that inequality: “[G]lobal justice and
climate change must be addressed simultaneously, and as manifestations of
the same set of problems.” In Atmospheric Justice: A Political Theory of
Climate Change, Steve Vanderheiden writes that anthropogenic climate
change demonstrates an exploitative relationship between the world’s
affluent and the world’s poor and that allowing industrialized nations to
continue to dominate the climate policy-making process “violates any
defensible version of political equality.” Shifting the focus to social
justice increases the ability of policymakers to distinguish between “good
and bad outcomes and states of affairs, to inform present and future acts and
choices, and to evaluate proposed and past actions.” When evaluating the
vulnerability of the PSIDS, their social, institutional, and economic
vulnerability must be considered along with their more obvious
environmental and geographical vulnerability.

B. Fairness

The inequality inherent in the anthropogenic climate change crisis and
the political attempts to address it tend to be viewed as an issue of
“profligate Northern consumption” that the North uses to “thwart the

217. Id. at 14.
218. Id. at 18.
219. Id.
220. Id. at 8.
221. VANDERHEIDEN, supra note 66, at 252 (citing Our Common Future, supra note 65).
222. VANDERHEIDEN, supra note 66, at 63.
223. Id. at 48–49.
224. ROBERTS & PARKS, supra note 1, at 20.
economic development of poor nations.” Put in a more cynical way, the “rich nations pay for climate change with dollars and poor nations pay with their lives.” 225 The lack of trust and unequal bargaining leverage in negotiating arenas have a profound impact on developing countries’ perception of the fairness of proposed solutions to address climate change impacts. 226 While a nation’s understanding of “fairness” depends on its position in the “global hierarchy of economic and political power,” 227 efforts to incorporate norms and principles of fairness can also create a “collaborative equilibrium and reduce monitoring and enforcement costs,” as well as “influence the costs of bargaining.” 228 For the PSIDS, a “fair agreement” would “immediately stabilize the climate, forestall the complete destruction of island nations and cultures, and address their basic economic needs and extraordinary vulnerability to climate-related stress and hydro-meteorological disasters.” 229 Since stabilizing the climate is not a realistic possibility of avoiding the permanent relocation of some populations of PSIDS, the policy emphasis must be placed on: (1) requiring legally binding targets for greenhouse gas reduction; (2) meeting the immediate humanitarian needs of climate change displaced persons; and (3) developing adaptation measures that effectively respond to the developmental and cultural needs of the most vulnerable nations.

C. Causation

The problem of causation refers to the ability of climate change to exacerbate other political, social, economic, and environmental inequalities, making it difficult to pinpoint climate change as a direct cause of any particular negative impact. Proving causation requires precise estimates of the geographic distribution of climate change displacement due to sea level rise and increasing severe weather events. 230 Despite the lack of a direct relationship between climate change and displacement, the UNHCR issued several key messages and recommendations to State Parties to the UNFCCC that are worth noting. First, there is a clear link, if not a direct causal relationship, between the effects of climate change and displacement. 231 Therefore, the international community has an obligation

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225. Id. at 37.
226. Id. at 62.
227. Id. at 137.
228. Id. at 64.
229. Id. at 136.
231. UNHCR Summary of Deliberations, supra note 58.
to protect and assist persons displaced across international borders in a manner similar to the protection given to internally displaced persons (IDPs) and other refugees as defined under the Refugee Convention.232 Second, an appropriate form of protection for persons who do not qualify as refugees but whose return is “not feasible or not reasonable due to circumstances in the place of origin and/or personal conditions” must be incorporated into the post-Kyoto Protocol regime.233 Third, the post-Kyoto Protocol regime and any other adaptation regime must cover forced displacement with the guiding principle being the “ability of States to meet the needs of the most vulnerable and those most affected by climate change.”234

D. Responsibility

According to Vanderheiden, South Pacific island nations deserve compensation for their injuries because they stand to be the most severely affected by climate change and bear the least responsibility for causing the problem. Thus, compensation costs should be assigned in proportion to each nation’s historical “luxury emissions,” with the largest polluters paying the largest amount into a fund that may be used for adaptation or relocation purposes.235 Assigning financial and moral responsibility to those nations that have benefited disproportionately recognizes that once an “ethical threshold” has passed whereby people are limited in their health, access to education and knowledge, general safety, self-respect, social recognition, and political participation, the rest of the world has a moral obligation to provide help.236 This moral obligation stems from the positive duty to treat all humans with dignity and respect and the negative duty to not cause harm.237 Responsibility for adaptation measures should be shared between home states, who bear the burden of “remedial measures;” host states, who bear the burden of implementing assistance; and the international community, who bears the burden of financial assistance.238 The U.N. Committee on Economic, Social, and Cultural Rights (CESCR) argues that states have a “joint and individual responsibility . . . to cooperate in providing disaster relief and humanitarian assistance to

232. Id. at 2.
233. Id. at 3.
234. Id. at 3.
235. VANDERHEIDEN, supra note 66, at 231.
236. Byravan & Rajan, supra note 10, at 250.
237. Id.
refugees and internally displaced persons.”\textsuperscript{239} The more that the rich, developed nations show that they understand that climate treaty negotiations are taking place during an ongoing development crisis and that they are concerned about the disparity of labor, poverty, and structural vulnerability, the more credibility and trust is gained.\textsuperscript{240} The trans-boundary problem of climate change, where the policies of one state have profound effects on the welfare of others, create “overlapping communities of fate” that require new international institutions for globalized environmental governance.\textsuperscript{241}

In light of the foregoing, a proper integration of climate justice and sustainable development with climate change mitigation and adaptation schemes needs to: (1) promote equity and fairness between nations; (2) determine the responsibility of developed countries for climate change impacts caused by greenhouse gas emissions; (3) determine how much assistance developed countries should make available for developing countries and how to share the burden; (4) determine how assistance should be distributed between countries and adaptive measures; and (5) determine how planning and decision-making regarding adaptation should occur at different levels of governance.\textsuperscript{242} A crucial function of any agreement concerning the relocation of climate change displaced persons is to preserve and safeguard the “practices, representations, expressions, knowledge, skills—as well as instruments, objects, artifacts, and cultural spaces associated therewith” that communities consider part of their cultural heritage.\textsuperscript{243}

VI. TO SINK OR TO SWIM: POLICY AND LEGAL STRATEGIES TO MEET THE CLIMATE JUSTICE AND SUSTAINABLE DEVELOPMENT NEEDS OF SOUTH PACIFIC ISLAND NATIONS FACING CLIMATE DISPLACEMENT

There are several strategies, programs, and proposals currently in action to revise existing policy instruments or to create new policies that incorporate the principles of climate justice and sustainable development in the context of permanent displacement in the South Pacific. This final section reviews: two draft proposals for a new convention on climate

\begin{thebibliography}{9}
\bibitem{239} Id. at 383.
\bibitem{240} ROBERTS & PARKS, supra note 1, at 23.
\bibitem{241} VANDERHEIDEN, supra note 66, at 89 (citing David Held, Regulating Globalization? The Reinvention of Politics, 15 INT’L SOCIOLOGY 399 (June 2000)).
\bibitem{242} ROBERTS & PARKS, supra note 1, at 16.
\end{thebibliography}
change displaced persons; a proposal for a new international treaty for “climate exiles;” a proposal for a new Protocol on Recognition, Protection and Resettlement of Climate Refugees under the UNFCCC; and the local relocation program developed by the Carteret Council of Chiefs (CoE).


The preamble to the Federal States of Micronesia (FSM) Constitution reads:

Our ancestors, who made their homes on these islands, displaced no other people. We, who remain, wish no other home than this. . . . Micronesia began in the days when man explored seas in rafts and canoes. The Micronesian nation is born in an age when men voyage among stars; our world itself is an island. 244

A “Draft Convention on the International Status of Environmentally-Displaced Persons,” was proposed by Julien Bétaille and others from the Center for International and Comparative Environmental Law (CIDCE) in 2008 to draw attention to the environmental harm that necessitates human displacement. 245 The preamble to the Draft Convention notes that the growth and foreseeability of climate-induced displacement constitutes a threat to the “stability of human societies, the preservation of cultures, and world peace,” and the international community has a duty to develop an agreement on the international status of environmentally displaced persons in order to assist States that suffer from ecological disaster. 246 The objective of the Convention is “to contribute to guaranteeing the rights of environmentally-displaced persons,” both internal and inter-state, who are defined as “individuals, families and populations confronted with a sudden or gradual environmental disaster that inexorably impacts their living conditions and results in their forced displacement, at the outset or throughout, from their habitual residence.” 247 The principles underlying the Convention include the principle of solidarity, common but differentiated responsibilities, effective protection, non-discrimination, and non-

244. The Constitution of the Federated States of Micronesia, Preamble.
245. Bétaille et al., supra note 95, at 1.
246. Id. at 395–96.
247. Id. at 397.
The specific rights guaranteed to persons threatened by displacement include rights to information and participation, displacement, and the right to refuse displacement. The rights guaranteed to persons already displaced include those common to inter-state and internally displaced persons. The Convention would include a World Fund for the Environmentally Displaced that would “provide financial and material assistance for the receipt and return of the environmentally-displaced.” The Fund would be supported by voluntary contributions from states and private actors and mandatory contributions based on a tax for “the causes of sudden or gradual environmental disasters susceptible of creating environmental displacement.”

B. Convention for Persons Displaced by Climate Change

The proposal made by David Hodgkinson and others for a “Convention for Persons Displaced by Climate Change” addresses both internal and international displacement, creates original definitions for “climate displaced persons” and “climate change event[s],” and provides for the development of SIDS. Their proposal defines climate change displaced persons as “groups of people whose habitual homes have become—or will, on the balance of probabilities, become—temporarily or permanently uninhabitable as a consequence of a climate change event.” The Convention would assign rights and protections through a process of “request and determination” that would be based on scientific studies and the particular situation of the community. Under the Convention, displacement would be viewed as “a form of adaptation that creates particular vulnerabilities requiring protection as well as assistance through international cooperation.” Hodgkinson and others took into consideration that climate change and human rights vulnerabilities have a common link to resource poor countries where climate change impacts populations unevenly and unequally in ways that are “de facto

248. Id. at 398.
249. Id. at 399.
250. Id. at 399 (explaining the rights of all environmental refugees).
251. Id. at 402–3.
252. Id. at 403.
254. Id. (defining “climate change event” as a “sudden or gradual environmental disruption that is consistent with climate change and to which humans very likely contributed.”)
255. Id.
256. Id. at 89.
discriminatory” because “the private capacity of individuals to resist and adapt differs greatly.”\textsuperscript{257} The authors therefore incorporated the principle of common but differentiated responsibilities, which “recognizes historical differences in the contributions of developed and developing states to global environmental problems, and differences in their respective economic and technical capacity to tackle these problems.”\textsuperscript{258} The Convention would also facilitate regional and local planning that recognizes both human rights and international environmental law and the Guiding Principles for internally displaced persons.\textsuperscript{259} Thus, the emphasis of this Convention would be on the duty of a particular state to provide protection and humanitarian assistance to climate change displaced persons within its jurisdiction and to support governments, local communities, and agencies in fulfilling that duty.\textsuperscript{260}

\textit{C. Climate Exile Treaty}

In their proposal for a new international treaty, Byravan and Rajan discuss the need to develop climate change based criteria for determining the status of climate exiles and their rights, and to provide skills and training for relocation and redevelopment elsewhere.\textsuperscript{261} They invoke the “beneficiary pays” principle, which states that “countries that undertook and benefited from emissions activities are liable for the costs of combating negative externalities that resulted from them.”\textsuperscript{262} The authors conclude that “the ethical imperative for the world to act on behalf of the victims of sea-level rise seems clear” and the response must “attempt to restore, or at least compensate for the loss of, human functionings \ldots and the burden for doing so should be shared in accordance with responsibility and capacity of the countries of the world.”\textsuperscript{263}

\begin{itemize}
\item \textsuperscript{257} \textit{Id.} at 104 (quoting International Council on Human Rights Policy, \textit{Climate Change and Human Rights: A Rough Guide}, 1 (2008)).
\item \textsuperscript{259} Hodkinson, \textit{supra} note 253, at 110.
\item \textsuperscript{260} \textit{Id.} at 109–10.
\item \textsuperscript{261} Byravan & Rajan, \textit{supra} note 10, at 253.
\item \textsuperscript{262} \textit{Id.} at 254.
\item \textsuperscript{263} \textit{Id.} at 250, 257 (noting that human “functionings” refer to “health, access to education and knowledge, general safety, self-respect, social recognition, and political participation”).
\end{itemize}
Rather than create a new convention, Biermann and Boas propose a new Protocol on Recognition, Protection and Resettlement of Climate Refugees under the UNFCCC, since a network of implementing agencies already exist.\textsuperscript{264} This protocol would provide for the resettlement and reintegration of affected populations over a period of years; offer permanent immigrant status for climate refugees to the regions or countries that accept them; focus on the needs of entire groups of people rather than individuals; provide support for governments, local communities, and national agencies to protect people within their territories; and emphasize the need to protect climate refugees as a global problem and a global responsibility.\textsuperscript{265} Funding for this Protocol would come from a newly created Climate Refugee Protection and Resettlement Fund that would be based on grants in order to reimburse “refugee-protection costs fully when the sole cause of the migration is climate change and partially when it is only a contributory cause.”\textsuperscript{266} Parties to the UNFCCC would determine the recipients of the grants.

\textbf{E. Regional and Bilateral Agreements}

Whether a new treaty or Convention should be created depends on its effectiveness as more than just a climate change mitigation or human-migration instrument, but as a tool of adaptation for climate justice and sustainable development. Any new convention to address the needs of climate change displaced persons should go beyond the Refugee Convention to include basic survival needs and humanitarian aid.\textsuperscript{267} Williams argues that “taking into consideration the unwillingness of states to compromise their sovereignty, and acknowledging the reluctance of the United States to agree to... the Kyoto Protocol, it would seem unlikely that a new global agreement could be reached specifically in relation to climate change displacement.”\textsuperscript{268} Instead, Williams advocates for “regional
cooperation and bilateral agreement[s] that build on existing geopolitical and economic relationships” and “that allow states to develop responsive policies in a timeframe appropriate to the relative capacity of the countries involved.”\textsuperscript{269} A bilateral or regional approach has several advantages, including the exchange of good practices between groups and engagement at various levels of negotiation depending on the individual capacity of each country and the severity of the problem in that area.\textsuperscript{270} The UNHCR also emphasizes the importance of pooling the limited human, technical, and financial resources of developing states through regional cooperation and institutions to achieve uniformity in providing assistance.\textsuperscript{271} Organizations such as the UNHCR, International Organization for Migration (IOM), the International Labour Organization (ILO), and other relevant international organizations can help support these regional agreements and institutions. These organizations assist by providing relevant expertise in the design and implementation of early warning systems, vulnerability assessments, and adaptation strategies. They also assist by improving access to financial and technical resources, and strengthening the capacity of developing countries to respond to slow-onset climate related disasters, including permanent migratory regimes.\textsuperscript{272}

\textbf{F. Local Adaptation Programs}

On the Carteret Islands, frustrated by the “empty promises” and lack of assistance coming from both the international community and the Papua New Guinea government, the CoE formed an association called Tulele Peisa in 2006, which means “sailing the waves on our own.”\textsuperscript{273} Tulele Peisa’s vision is “[t]o maintain our cultural identity and live sustainably wherever we are.”\textsuperscript{274} Tulele Peisa negotiated with the Catholic Church and private landowners on the mainland island of Bougainville for the voluntary relocation of 1,700 people, approximately half of the Carterets’ entire population, to three locations—Tinputz, Tearouki, and Raua—over the next ten years. The Carterets Integrated Relocation Program plans to work with both the voluntary migrants and the 10,000 inhabitants of the three host communities on Bougainville in order to help integrate the new immigrants.
into the existing community.\textsuperscript{275} Activities include upgrades to health and education facilities, training programs for income generation, and exchange programs to build relationships and understanding.\textsuperscript{276} Other services and programs will include a sea transport service for fishing, the creation of a marine conservation and management area, the formation of a Relocation Task Force Committee, and the development of grassroots microfinance institutions to help raise local revenue. So far, Tulele Peisa has been successful in identifying community leaders on both the Carterets and Bougainville to serve on the Relocation Task Force Committee and help mobilize community support for voluntary relocation. Tulele Peisa has also organized a number of training workshops to help build the Carterets’ adaptive capacity in terms of land negotiations, social mapping, and climate change campaigns. Finally, Tulele Peisa has gained credibility as an effective organization at the local as well as regional level due to an active public relations and media campaign. One of Tulele Peisa’s objectives is to build an “alliance of vulnerable South Pacific communities affected by climate change that can help lobby and advocate for justice and policies that recognize and support their needs.”\textsuperscript{277} In order to fulfill their objectives and continue implementation of the Relocation Program, Tulele Peisa needs financial support and technical assistance that can only come from the international community. Ursula Rakova, the director of Tulele Peisa and a native of the Carterets, said in a video that a fair climate change deal at the international level is necessary because in most industrialized countries, adaptation means a lifestyle change whereas in the South Pacific, adaptation represents life and death and cultural survival.\textsuperscript{278}

Local adaptation programs like Tulele Peisa demonstrate the benefit of empowering communities to develop strategies tailored to the specific social, political, economic, environmental, and cultural needs of their societies. In order for such programs to be successful, however, there must be regional and bilateral cooperation between the host and home countries so that the rights of both climate-displaced persons and their host communities are protected, the humanitarian needs of the displaced are met, and the adaptive capacity of the host communities is strengthened. In addition, climate change displaced persons must receive political and legal recognition at the international level and be offered financial and technical

\textsuperscript{275} Id.
\textsuperscript{276} Id.
\textsuperscript{277} Id. at 9.
\textsuperscript{278} Ursula Rakova’s, Executive Director of Tulele Peisa, Message to World Leaders for a Deal at Copenhagen (Nov. 11, 2009), available at https://www.youtube.com/watch?v=Ch3uoajQ3gyE.
assistance as needed during the short term relocation process and the long term resettlement process. Such recognition and assistance helps fulfill the obligation the international community owes to the most vulnerable societies in their pursuit of climate justice and sustainable development.

CONCLUSION

The policy, legal, and human rights implications of a disappearing nation due to climate change are not being seriously addressed at current negotiating sessions and climate change meetings. If the international community continues to stall on taking actions to address the needs of people permanently displaced by climate change due to continuing debates over whether to classify them as “refugees,” the direct causal link between climate change and displacement, and the level of responsibility and aid owed to the displaced, then threatened nations will start to pursue legal remedies. Richard Towl, the U.N. Refugee Agency (UNHCR) Regional Representative for Australia, New Zealand, Papua New Guinea and the Pacific, has stated that:

[I]t is clear that climate change—and the human security and development challenges it brings—adds to the scale and complexity of human movement and displacement in the region [and] we need to act now if we are to find solutions for people whose homes, lands and livelihoods are, as we speak, being destroyed by rising sea levels and violent fluctuations in weather patterns in the region.280

Regardless of whether the migration is internal or transnational, global environmental governance must involve the recognition, protection, and resettlement of climate-displaced-persons.281 The UNHCR describes the elements of sustainability necessary in the development of “durable solutions to maintain the rights of the displaced” to include consultation


280. Id.

281. Biermann & Boas, supra note 6, at 61, 63.
with and participation of affected communities for the purposes of “safety, recovery of land and property, physical needs, [and] livelihoods.”

A coherent multilateral governance framework that incorporates local, regional, and international mitigation and adaptation strategies is needed to meet the climate justice and sustainable development needs of climate-displaced persons. Practically, this includes recognition under international law, binding international agreements for mitigation and adaptation assistance, regional and bilateral migration programs, and local development strategies. Each level must emphasize equity and fairness, incorporate the principles of precaution, non-discrimination, and non-refoulement, and meet the immediate humanitarian needs of climate-displaced persons. Ethically, the framework should further recognize the human rights and rights to self-determination, cultural integrity, and development of climate-displaced persons in a healthy, sustainable environment.

282. UNHCR Summary of Deliberations, supra note 58, at 9.