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RELIGION AS SWORD, BUT NOT AS SHIELD:
RECTIFYING THE ESTRANGEMENT OF
ENVIRONMENTALISM AND RELIGIOUS LIBERTY

Justin W. Aimonetti* & Christian Talley*

Abstract

Over the past thirty years, a remarkable but unacknowledged shift has occurred in the relationship between environmentalism and religious liberty. For a brief period in the latter half of the twentieth century, the two fields stood in legal alliance. Relying on pre-1990 case law under which plaintiffs could attain strict scrutiny for incidental burdens on religious practice, litigants once enjoyed occasional success in enjoining governmental development projects harmful to both the environment and religious free exercise. This Essay terms such religious liberty claims advanced to protect the environment “Track I” claims. In its 1990 decision Employment Division v. Smith, however, the Supreme Court abandoned application of strict scrutiny to incidental burdens upon religious practice. Reacting to the Smith decision, Congress passed statutes intended to overrule Smith’s holding and to restore strict scrutiny for incidental burdens. Yet a paradoxical result ensued. Plaintiffs began to invoke religious liberty to gain religious exemptions from generally applicable environmental law. This Essay terms such claims advanced to gain exemptions from environmental protection laws “Track II” claims. Despite the advent of Track II claims, Track I claims have remained non-viable. The consequence has been the systematic use of religious liberty to evade environmental regulations, with no countervailing use to secure protections for the environment. This Essay documents the historical reasons behind that shift and proposes solutions to rectify the present disparity between Track I and Track II claims. If religion is to be a sword that can harm the environment, religion should also be a shield that can protect it, or else it should exit the battlefield altogether.

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INTRODUCTION

Environmentalism and religious liberty might appear at first blush to be natural allies. Many religions encourage their adherents to protect the environment. In 2015, for example, Pope Francis released a lengthy papal encyclical, subtitled On Care for Our Common Home, urging Christians to preserve the earth and confront pollution and climate change. Similarly, there is a robust strain of Jewish environmentalism informed by traditional Judaic doctrines yet responsive to modern environmental degradation. No less compelling are the religious precepts of America’s indigenous peoples. Indigenous religions often distinctively emphasize natural locales — “[u]ndisturbed, unaltered, and pristine” — in which to conduct traditional religious rituals. Under these and yet further belief systems, religious faith and environmentalism each inform and fortify the other.

Despite this intuitive union, modern American religious liberty doctrine has embraced a counterintuitive model of interaction between environmentalism and religion. Religious liberty claims advanced to protect

1. POPE FRANCIS, LAUDATO SI’: ON CARE FOR OUR COMMON HOME 3 (Vatican Press, 2015).
3. Robert S. Michaelsen, American Indian Religious Freedom Litigation: Promise and Perils, 3 J. OF L. & RELIGION 47, 60 (1985) (“American Indian traditions . . . have long been associated with particular areas.”).
the environment—what this Essay terms Track I claims—generally have failed, sometimes spectacularly, leading to new doctrinal restrictions on religious liberty. The Supreme Court and lower courts have been unreceptive to claims employing religion as a shield against government intrusions upon the environment. Conversely, claimants seeking religious exemptions from environmental regulations—what this Essay terms Track II claims—have proven more successful. Alleging that certain environmental regulations unduly burden their religious exercise, Track II claimants have threatened litigation and evaded environmental protections nationwide. Religion’s primary utility in the field of environmental law has emerged, ironically, not as a shield, but as a sword.

The historical arc that produced this estrangement of environmentalism and religious liberty was not inevitable. Rather, it hinged on specific decisions of Congress and the Supreme Court in the last thirty years. This Essay is the first to trace that historical path, from the natural alliance between environmentalism and religion to the present disunion. In so doing, it proposes potential legislative and judicial reforms—reforms of particular relevance as the Court considers this term whether to overhaul its free exercise jurisprudence.

Part I describes the Court’s religious liberty jurisprudence as bookended by two watershed cases: Sherbert v. Verner, decided in 1963, and Lyng v.

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6. See Lyng v. Nw. Indian Protective Cemetery Ass’n, 485 U.S. 439, 451 (1988) (applying a novel and circumscribed test for infringement of religious free exercise to deny a tribal free exercise claim despite potentially “devastating effects” on tribal religious practice); see also infra Part I (exploring Track I claims’ failure and describing various circuits’ rejection of Native Americans’ Track I claims).
7. See, e.g., Lyng, 485 U.S. at 450, 452.
8. See infra Part III (examining Track II claims’ success).
Northwest Indian Cemetery Protective Association,14 decided in 1988. Sherbert established an exemption era15 with its holding that generally applicable laws that substantially burdened religious practice—even if doing so incidentally—could receive strict scrutiny.16 Though religious exemptions were rare,17 this strict scrutiny regime struck many as naturally congruent with free exercise challenges to environmentally harmful government action that burdened religious practice.18 Lyng, however, dispelled these perceptions. In rejecting Native Americans’ challenge to the government’s proposed construction of a logging road through a tribal sacred site, the Court sharply clamped down on religious liberty claims altogether.19 Lyng thus closed the courthouse doors to religious adherents advancing Track I environmental protection claims.

Part II documents the Court’s rejection of the Sherbert exemption model in its 1990 decision Employment Division v. Smith.20 Curtailing Sherbert, the Smith Court held that neutral and generally applicable laws that incidentally burden religion are subject only to rational basis review.21 Grounding its decision in rule of law concerns, the Smith Court worried that religious challenges against neutral and general laws could undermine government objectives and promote “anarchy.”22 In the context of environmental concerns, the Smith Court specifically criticized Track II religious liberty claims being used to undermine generally applicable regulations protecting the environment.23 Cabining Sherbert, in the Court’s view, would block the possibility of religious exemptions eroding environmental regulations.24

Part III describes Congress’s reaction to the Smith decision and a consequence of that reaction overlooked until now—the resurgence of Track

17. Duncan, supra note 15, at 1180–81 (discussing Sherbert-era courts’ reluctance to grant exemptions and the various theories used to deny them).
18. The Lyng amici represent an interesting cross-section of groups that apparently subscribed to this view. They included the Christian Legal Society, the American Civil Liberties Union, Concerned Women for America, and the American Jewish Congress. Lyng, 485 U.S. at 441.
19. See infra Part I (examining Lyng’s amplification of the requirements for claims to receive strict scrutiny).
21. See id. at 884–85 (declining to apply Sherbert test to free exercise challenges); Ryan S. Rummage, In Combination: Using Hybrid Rights to Expand Religious Liberty, 64 Emory L.J. 1175, 1184 (2015) (stating that Smith “changed the level of scrutiny for free exercise claims back to the lowest level of scrutiny, rational basis review”).
22. Smith, 494 U.S. at 888.
23. See id. at 886, 889 (criticizing track II-type claims as a “constitutional anomaly”).
24. See id. at 888–89 (stating that respondent’s rule would allow religious exemptions to environmental protection).
II religious liberty claims. In the wake of Smith, Congress attempted to overrule Smith’s central holding by passing two religious liberty statutes: the Religious Freedom Restoration Act (RFRA)\textsuperscript{25} and the Religious Land Use and Institutionalized Persons Act (RLUIPA).\textsuperscript{26} Both statutes restored Sherbert’s strict scrutiny analysis for religious claims made against government action, RFRA generally and RLUIPA specifically in the context of land use.\textsuperscript{27} Though RLUIPA aimed to codify non-discrimination principles against religious entities, an odd result has ensued: Religious entities now may wield RLUIPA-based challenges to gain exemptions from local zoning and land use regulations intended to protect the environment.\textsuperscript{28} Yet as these Track II claims against regulations have succeeded—as forewarned by Smith—Track I claims intended to halt environmentally harmful government action have failed. Part III explores the doctrinal reasons for, and normative consequences of, this discrepancy.

Part IV proposes congressional changes to RFRA and RLUIPA and judicial reform of the relevant case law to rectify the estrangement of environmentalism and religious liberty. In short, religious liberty doctrine should either recognize both Track I and Track II claims as cognizable, or it should disallow both. But there is no persuasive justification for the latter’s success and the former’s concurrent failure. If religion is to be a sword, religion should also be a shield, or else it should exit the battlefield altogether.

I. TRACK I CLAIMS UNDER THE SHERBERT STRICT SCRUTINY REGIME

The roots of both Track I and Track II claims can be traced to the Court’s mid-century religious liberty jurisprudence. The Court’s initial encounters with religious liberty claims reflected doctrinal instability. In Gobitis, the Court held that the free exercise clause was not violated even when the government directly compelled behavior antithetical to religious beliefs.\textsuperscript{29} Three years later, the Court reversed its decision on indistinguishable facts, but under a free speech rationale.\textsuperscript{30} The doctrine exhibited similar instability as the Court decided the level of scrutiny that should apply to state action incidentally harming religious practice. In cases like Braunfeld v. Brown, the Court first held that claims of incidental burden—asserted harms to religious

\footnotesize{27. Additionally, RLUIPA permits strict scrutiny for prisoners’ religious claims. See infra Part III.}
\footnotesize{28. See 42 U.S.C. § 2000cc(a)-(b) (granting local land use zoning exemption for religious exercise); see also infra notes 127, 185–89 and accompanying text (explaining RLUIPA’s original non-discrimination purpose).}
\footnotesize{29. See Minersville Sch. Dist. v. Gobitis, 310 U.S. 586, 607 (1940) (holding minority religious belief does not outweigh state’s interest in school discipline).}
practice without a showing of discriminatory intent—were not cognizable under the free exercise clause.  

Yet Justice Brennan, dissenting in *Braunfeld*, thought the majority’s approach undercut the “preservation of personal liberty.” Irrespective of their neutrality and general applicability, laws could be potentially unconstitutional, in his view, so long as “their effect” was to substantially burden religion.

A mere two years after penning his *Braunfeld* dissent, Justice Brennan wrote his views into law with his majority opinion in *Sherbert v. Verner*. Speaking for the Court, Justice Brennan held that substantial burdens upon religious free exercise—even if such burdens were merely incidental—may trigger strict scrutiny. In deciding in favor of a Seventh-Day Adventist who had been denied unemployment benefits after refusing to work on Saturdays, the Court set out a two-part framework that would govern religious liberty claims for the next twenty-seven years. The first part of this analysis involved a three-prong threshold showing under which courts would determine whether a claim warranted strict scrutiny. Courts were to ask whether (1) the claimant was asserting a religious belief, (2) whether that religious belief was sincere, and (3) whether the government had imposed a “substantial burden” upon the asserted religious practice. This third “substantial burden” prong had two constituent inquiries: (a) the “subjective” burden—whether the religious adherent perceived her beliefs were burdened—and (b) the “objective” burden—whether the government was indeed forcing the adherent into a tough choice between practicing religion or receiving secular benefits. The Court held that Adele Sherbert’s claim had satisfied all elements of this threshold showing. Under standards that were initially deferential to claimants, it determined that she was both

31. *Braunfeld v. Brown*, 366 U.S. 599, 607 (1961) (“But if the State regulates conduct by enacting a general law within its power, the purpose and effect of which is to advance the State’s secular goals, the statute is valid despite its indirect burden on religious observance unless the State may accomplish its purpose by means which do not impose such a burden.”); see also id. at 605–06, 608 (mentioning two other cases where individuals’ religious practices conflicted with the public interest and distinguishing *Braunfeld* since the law at issue “simply regulates a secular activity and, as applied to appellants, operates so as to make the practice of their religious beliefs more expensive”).

32. *Id.* at 610 (Brennan, J., concurring and dissenting).

33. *Id.* at 613, 615.


35. *Id.* at 403.

36. *Id.* at 403, 406, 408–09; *Duncan, supra* note 15, at 1179.


asserting a religious belief and that her belief was sincere.\textsuperscript{40} Moreover, the Court concluded, she perceived her free exercise to be burdened, as the government had forced her either to work and violate her religious beliefs or not work, preserve her beliefs, and go destitute.\textsuperscript{41}

With this threshold showing satisfied, the burden then shifted to the government to justify its actions under a robust formulation of strict scrutiny. Under that inquiry, courts would ask, first, whether the incidental burden could be justified by a “compelling state interest.”\textsuperscript{42} And second, even if the government could point to some harm it sought to mitigate by curtailing religious practice, it would next have “to demonstrate that no alternative forms of regulation would combat such abuses without infringing First Amendment rights.”\textsuperscript{43} In \textit{Sherbert} itself, the Court rejected South Carolina’s admonitions about fraudulent claims upon the welfare system as insufficiently compelling to justify the burden imposed.\textsuperscript{44} The Court, therefore, held that Sherbert was entitled to an exemption from the general rule that those voluntarily choosing not to work were ineligible for benefits.\textsuperscript{45}

In the years following \textit{Sherbert}, religious claimants employed that decision’s two-step framework to seek exemptions from a wide variety of governmental regulations—from the assignment of social security numbers\textsuperscript{46} to compulsory education.\textsuperscript{47} Less studied has been religious adherents’ use of the \textit{Sherbert} framework to assert environmental religious liberty claims.\textsuperscript{48} In practice, indigenous peoples were those who usually asserted Track I claims, as their spiritual practices often emphasize unaltered natural places in which to conduct religious ceremonies.\textsuperscript{49} Government-sponsored development projects like logging, mining, and pipelines occasionally posed existential threats to these traditional belief systems.

The results of early Track I challenges that sought to enjoin such projects were mixed. On the one hand, though acknowledging that the free exercise

\textsuperscript{40}. \textit{Id.} at 404 (noting that the state ruled petitioner ineligible for benefits based solely on her religion).
\textsuperscript{41}. \textit{Id.}
\textsuperscript{42}. \textit{Id.} at 403.
\textsuperscript{43}. \textit{Id.} at 407.
\textsuperscript{44}. \textit{Id.}
\textsuperscript{45}. \textit{Id.} at 408–09.
\textsuperscript{48}. \textit{See}, e.g., Timothy A. Wiseman, \textit{Why the Religious Freedom Restoration Act Cannot Protect Sacred Sites}, \textit{5 Am. Indian L.J.} 139, 141 (2017) (explaining that “the substantial burden test was not enough to protect Native American religions and their sacred places, either before or after the RFRA was passed”); \textit{see generally} Amy Bowers & Kristen Carpenter, \textit{Challenging the Narrative of Conquest: The Story of Lyng v. Northwest Indian Cemetery Protective Association}, \textit{in Indian Law Stories} (Carole E. Goldberg, ed., 2011) (providing historical background on the case, but not discussing the historical arc’s development).
\textsuperscript{49}. Michaelsen, \textit{supra} note 3, at 59–61.
clause constrained the government’s ability to dispose of public lands, several circuits had rejected such claims. The District of Columbia, Sixth, and Tenth Circuits had held either that indigenous peoples suffered no substantial burden on their religious practice, failing the first step of the *Sherbert* test, or that a compelling interest backed the government’s projects, failing the second step. On the other hand, the Ninth Circuit and some district courts determined that Native tribes had asserted meritorious Track I claims. Foremost among these were the Yurok, Karok, and Tolowa tribes’ long-running resistance to the government’s proposed construction of a commercial logging road in California’s Six Rivers National Forest. “For generations,” members of those tribes had “traveled to the high country to communicate with the ‘great creator,’ to perform rituals, and to prepare for specific religious and medicinal ceremonies.” The significance of this location “to the Indian plaintiffs’ religion [made it] central and indispensable” to their religious practice.

The government’s proposed development project, in turn, threatened to degrade the “pristine environment and [the] opportunity for [religious] solicitude” found in Six Rivers National Forest. In the Tribes’ view, the ensuing “environmental degradation of the high country . . . would erode the religious significance of the areas.” Specifically, constructing the logging road would cause a number of adverse environmental effects. The government conceded that its project would cause erosion, resulting in rock and debris slides that threatened to pollute nearby waterways, increasing sedimentation and endangering native marine life. And after the road’s construction, its use for commercial logging projects would generate noise.

50. Wilson v. Block, 708 F.2d 735, 744 n.5 (D.C. Cir. 1983) ("The government must manage its land in accordance with the Constitution . . . which nowhere suggests that the Free Exercise Clause is inapplicable to government land.").
51. See id. at 741 (concluding a development project would not burden indigenous religious beliefs).
52. See id. at 741 (concluding a development project would not burden indigenous religious beliefs).
53. See id. at 741 (concluding a development project would not burden indigenous religious beliefs).
54. See id. at 741 (concluding a development project would not burden indigenous religious beliefs).
55. See id. at 741 (concluding a development project would not burden indigenous religious beliefs).
56. Id. at 594 (explaining the tribes’ land use dates back generations).
57. Id.
58. Id.
59. Id.
60. Id. at 592.
61. Id. at 600.
and emissions from the heavy rigs used to haul harvested timber. Given that
the project “would seriously damage the salient visual, aural, and
environmental qualities of the high country,” the district court found the
“intrusion . . . destructive of the very core of [Native American] religious
beliefs and practices.”

On review, the Ninth Circuit endorsed the district court’s conclusion that
the logging road would substantially burden the indigenous peoples’
religious exercise. Not mincing words, the panel explained that it “agree[d]
with the district court that the proposed operations would interfere with the
Indian plaintiffs’ free exercise rights.” In the court’s view, the land at issue
was indeed central to the Tribes’ longstanding and sincere religious
practice. Not only had the government failed to adequately account for the
project’s environmental impact, but the Ninth Circuit disagreed that there
was even a compelling interest in building the road.

Recognizing this nascent circuit split, the Supreme Court granted the
government’s petition for certiorari on what ultimately became Lyng v.
Northwest Indian Cemetery Protective Association. As the lower courts had
progressively fractured, Lyng forced the Justices to confront uncertainties in
Sherbert’s two-step framework. First among these was the showing required
to establish a substantial burden on religious practice—one of the key
threshold inquiries claimants had to satisfy before reaching strict scrutiny. In
the years leading up to Lyng, courts generally had accepted claimants’
assertions of “subjective” burden. Courts also tended to defer on the
questions whether claimants’ beliefs were truly “religious” and whether
those beliefs were sincere, under the longstanding principle that courts would
not interrogate whether claimants had correctly interpreted their own
religious creeds. The courts’ deference on those questions turned the
“objective” component of the substantial burden prong into the last
gatekeeper before plaintiffs could attain strict scrutiny.

In other Track I cases, lower courts had escaped invalidating
governmental development projects under strict scrutiny by determining that

64. Nw. Indian Cemetery Protective Ass’n v. Peterson, 795 F.2d 688, 692 (9th Cir. 1986).
65. Id.
66. Id. at 696–97.
67. Id. at 695 (disclaiming that the government had “the compelling interest required to justify its
proposed interference with the Indian plaintiffs’ free exercise rights”).
69. See Thomas, 450 U.S. at 716 (“Courts are not arbiters of scriptural interpretation.”); United
States v. Ballard, 322 U.S. 78, 86 (1944) (permitting inquiry into litigants’ sincerity, but not whether
beliefs were well-reasoned or true).
compelling governmental interests supported such projects.\textsuperscript{70} The Supreme Court, similarly, had refused to grant exemptions by pointing to the importance of various governmental interests at stake, such as the smooth functioning of the nation’s tax system.\textsuperscript{71} But in \textit{Lyng}, there was a serious question whether the government had a compelling interest in constructing a logging road in a remote corner of a national forest. The Ninth Circuit below had directly repudiated the government’s assertion that its purported interest was compelling.\textsuperscript{72}

To avoid the ramifications of declaring the government’s interest uncompelling, the \textit{Lyng} Court instead revised the \textit{Sherbert} framework. It heightened the showing needed to satisfy the “objective” burden, thus amplifying the requirements to receive strict scrutiny. Plaintiffs’ accusations that the government was \textit{harming} their religious beliefs, even profoundly so, would no longer be sufficient. Rather, under the \textit{Lyng} formulation, claimants would have to show that the government’s actions coerced them “into violating their religious beliefs” or “penaliz[ed]” believers for adhering to their religious practice.\textsuperscript{73} Under this modified standard, the government’s construction of the logging road would not \textit{itself} coerce the indigenous believers into violating their religion.\textsuperscript{74} Thus, despite the Court’s concession that “the logging and roadbuilding projects at issue . . . could have devastating effects on traditional Indian religious practices,” the Court concluded that the ‘Tribes’ claims were not cognizable First Amendment violations.\textsuperscript{75}

\textit{Lyng}’s significance to free exercise doctrine was immediately apparent. One commentator, criticizing the Court’s augmented strict scrutiny trigger, called it “the most troublesome decision on freedom of religion in more than 25 years.”\textsuperscript{76} What time has tended to obscure, however, is \textit{Lyng}’s significance not merely as a religious liberty case, but also as an environmental rights case. The Tribes’ assertion of a Track I claim was intended to protect not only their religious practice but the environment as well, as each interest was inextricably intertwined. Indeed, in addition to their free exercise claim, the Tribes pursued alternative theories under various

\textsuperscript{70} See, e.g., Badoni v. Higginson, 638 F.2d 172, 179 (10th Cir. 1980).
\textsuperscript{71} United States v. Lee, 455 U.S. 252, 260 (1982) (“The tax system could not function if denominations were allowed to challenge the tax system because tax payments were spent in a manner that violates their religious belief.”).
\textsuperscript{72} \textit{Peterson}, 795 F.2d at 695 (9th Cir. 1986).
\textsuperscript{73} \textit{Lyng} v. Nw. Indian Cemetery Protective Ass’n, 485 U.S. 439, 449 (1988).
\textsuperscript{74} Id.
\textsuperscript{75} Id. at 451.
federal environmental statutes, and several environmental interest groups served as co-plaintiffs. And at the same time, private industry recognized the case as a nominal dispute about religious liberty, but centrally a conflict between environmental preservation and the economic stakes of resource development.

The clearest illustration of that point came from an amicus brief filed in *Lyng* by special interest groups representing the mineral and coal mining industries. Their brief explained that “federal lands contain 85% of the nation’s crude oil, 40% of the natural gas, 40% of the uranium, and 35% of the coal reserves.” It was over these lands that Native Americans had asserted a series of free exercise claims, seeking to block development projects that interfered with their religious practice. The industries explained that the lower courts’ affirmation of Native religious rights would have to be rejected, or else “mineral exploration and development on public lands may be significantly impaired.”

The brief side-stepped the government’s apparent lack of a compelling interest in *Lyng* itself by asking the Court to consider the issues presented in the case at a higher level of generality. It claimed that the Ninth Circuit had erred by examining the merits of only “one particular proposal.” The proper inquiry, in the industries’ view, was instead the government’s general interest in “producing natural resources from public lands,” which it submitted was “compelling.” Conceding that “freedom to believe is at the foundation of fundamental rights,” the industries nonetheless argued that sincere religious beliefs “should not limit the government’s use of its resources.” Rather, such claims of “spiritual disquiet” would have to fall upon the altar of governmentally sponsored resource extraction.

Whatever persuasive weight the Court afforded the industries’ request for retrenchment, that was precisely the effect the majority’s opinion had. Clamping down on the threshold showing required for plaintiffs to receive strict scrutiny amounted to a functional foreclosure of Track I religious

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80. *Id.* at *2.
81. *Id.*
82. *Id.* at *15.
83. *Id.*
84. *Id.*
85. *Id.* at *17.
86. *Id.* at *14–15.*
liberty claims. 87 Future claimants asserting non-‘coercive,’ incidental burdens were now entitled only to rational basis review, under which the government, as in Lyng, could easily justify its development projects. Yet for all the criticism Lyng attracted, the reaction was ultimately muted compared to the Court’s forthcoming doctrinal revisions.

II. Smith and the Creation of Parity Between Track I & Track II Claims

Just two years after the Lyng decision, the Court conducted yet another overhaul of its free exercise jurisprudence. In Employment Division v. Smith, the Court was asked to invalidate the denial of unemployment benefits for two drug rehabilitation clinic employees fired for ingesting peyote.88 The respondents took the drug during a Native American religious ceremony, and they alleged that the resulting denial of unemployment benefits unduly burdened their religious free exercise.89 Writing for the Court in Smith, Justice Scalia effectively overruled Sherbert.90 Rather than portray the Sherbert framework as the baseline inquiry for free exercise analysis, he recast that framework as relevant only to “individualized governmental assessments,” like South Carolina’s adjudication of Adele Sherbert’s benefits.91 But neutral and generally applicable laws that incidentally burdened religion—even substantially so—would now receive only rational basis review under Smith.92 Further, Justice Scalia reasoned that the respondents had not been fired because of their religious beliefs, but because their ingestion of an illegal drug constituted workplace misconduct.93 And because those laws and regulations were neutral and generally applicable, rather than targeted at religious exercise, the respondents’ claim for relief failed.

The Smith majority proffered several justifications for its holding. One was the view that the free exercise clause codifies a distinction between belief

87. Lyng’s objective burden threshold was so high “that few free exercise claimants could overcome” it. James E. Ryan, Smith and the Religious Freedom Restoration Act: An Iconoclastic Assessment, 78 Va. L. Rev. 1407, 1415–16 (1992). Lyng thus did implicitly what Smith, two years later, did explicitly: terminate the exemption era. See id. at 1416 (“After Lyng it seemed the only sure way of demonstrating a burden would be to show that the particular religious practice in question was criminally prohibited.”).
89. Id.
90. Id. at 874, 878–88.
91. Id. at 884.
92. Id.; see also Rummage, supra note 23, at 1184 (explaining such claims would receive only rational basis review).
93. Smith, 494 U.S. at 874, 876.
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and conduct. Though the government may not target conduct solely for its religious nature, it may pass neutral and generally applicable regulations that incidentally burden religious conduct. Indeed, Justice Scalia disavowed the conclusion that the Court had ever held that “an individual’s religious beliefs excuse him from compliance with an otherwise valid law prohibiting conduct that the State is free to regulate.” A second rationale was the potential “anarchy” that might result if a religious claimant could obtain an exemption from generally applicable laws; were such exemptions available, a successful religious claimant could become “a law unto himself.” That “anarchy” had not resulted under Sherbert was not, in his view, a reason to retain that regime, but was instead an indication that the Supreme Court had never taken Sherbert seriously. Whether by finding the government’s interests compelling or by framing claimants’ religious burdens as insubstantial, the Court had recognized only a handful of exemptions during Sherbert’s quarter-century reign.

Justice Scalia also invited readers to envision the “parade of horribles” that might ensue if the Court were to strictly adhere to Sherbert. If religious claims were valid grounds for exemption from generally applicable laws, it might lead to the erosion of laws regulating taxation, mandatory vaccinations, drugs (as in Smith itself), the minimum wage, child labor, civil rights, and—most relevant for our purposes—environmental protection laws. The rule of law, in Justice Scalia’s view, was incompatible with a theory of religious liberty that would make Swiss cheese of such a panoply of socially important regulations.

Though typically not considered in the vanguard of environmental defenders, Justice Scalia revealed a deep insight about the interaction of environmentalism and religious liberty. His point concerned the normative undesirability of Track II religious liberty claims—how religious liberty might be used as a sword to evade environmental protections. The case he

94. Id. at 879, 882.
95. Id. at 877–78.
96. Id. at 878–79.
97. Id. at 879, 888.
98. See id. at 883 (“Although we have sometimes purported to apply the Sherbert test in contexts other than [unemployment benefits], we have always found the test satisfied.”).
99. See id. at 883–84.
100. Id. at 902 (O’Connor, J., concurring in the judgment) (so labeling the majority’s list of generally applicable laws that might be evaded with religious exemptions).
101. Id. at 889.
102. Id. (emphasis added).
103. Id. at 891; see, e.g., Dan Farber, Justice Scalia and Environmental Law, BERKELEY BLOG (Feb. 17, 2016), https://blogs.berkeley.edu/2016/02/17/justice-scalia-and-environmental-law/ (“Justice Scalia did much to shape environmental law, nearly always in a conservative direction . . . If Scalia had lived, he clearly would have pushed to expand on these precedents, further weakening environmental protection.”).
cited as illustrative of this pitfall was the Montana federal district court case United States v. Little. In Little, the federal government had charged the defendant, Swede Little, with illegally harvesting trees for firewood in a National Forest. Tried and convicted before a magistrate, Little sought review in the district court. Though conceding that he had taken the timber, the gravamen of his defense was that prosecuting him violated his free exercise rights. According to Little, “in all scriptural references pertaining to the gathering and using of firewood, God never implies that a king, ruler[,] or any individual has ownership over it.” Little thus contended that “the permits and fees required by the U.S. Forest Service are a violation of our God-given rights guaranteed by the U.S. Constitution.” The district court ultimately rejected his religious claim, finding him guilty of violating the regulations. Yet the potential that the district court might have reached a different result under Sherbert apparently struck Justice Scalia as a latent danger of that regime.

Smith’s implications for the relationship between environmentalism and religious liberty were thus double-edged. Smith, it is true, disallowed Track I claims intended to protect the environment from damaging governmental intrusions that incidentally burdened religious practice. But the Smith Court also rejected Track II claims because of such claims’ potential to confound environmental regulations. Smith was thus an exercise in taking the bitter with the sweet. Much like it promoted “equal liberty” by refusing to elevate religious claims above weighty claims of secular conscience, Smith leveled Track I and Track II claims by making each non-cognizable.

Whatever Smith’s merits, though, the backlash was fierce. Scholars and pundits labeled the decision “a sweeping repudiation of nearly a century of humane and enlightened legal precedent,” “an affront to our society’s hard-won pluralism,” and “the most dangerous attack on our civil rights in this country since the Dred Scott decision.” The significance of Smith was

104. Smith, 494 U.S. at 889 (citing United States v. Little, 638 F. Supp. 337 (D. Mont. 1986)).
105. Little, 638 F. Supp. at 338.
106. Id.
107. Id. at 338–39.
108. Id. at 339.
109. Id.
110. Id. at 340.
112. The Necessity of Religion: High Court Says Religious Freedom is a Luxury—Wrong, L.A. TIMES (Apr. 19, 1990), at B6; see also Ryan, supra note 87, at 1409–12 (cataloguing the backlash in the wake of the Smith decision).
113. L.A. TIMES, supra note 112.
not lost upon Congress either. Reacting to the abandonment of Sherbert, it soon passed the Religious Freedom Restoration Act of 1993. RFRA, as it became known, rejected Smith by name and purported to re-establish Sherbert’s strict scrutiny framework against both federal and state action incidentally burdening religious practice. After the Court’s invalidation of RFRA in 1997 as applied to the states, Congress responded with the Religious Land Use and Institutionalized Persons Act of 2000 (RLUIPA). RLUIPA again codified Sherbert’s standard against the states, yet its scope was limited to land use laws and prisoners’ free exercise rights. It was this legislative assault on Smith that produced the paradoxical result catalogued in Part III—the resurgence of Track II religious liberty claims.

III. THE PARADOXICAL RESURGENCE OF TRACK II CLAIMS

The rise of successful Track II religious liberty claims—and the concomitant lack of successful Track I claims—is tethered to the disuniform patchwork of scrutiny applied to religious liberty challenges after the last thirty years of doctrinal churn. Though RFRA purported to resurrect strict scrutiny for incidental burdens against government action at both the federal and state levels, the Court in City of Boerne v. Flores concluded that RFRA was inapplicable to the states. In a reassertion of judicial supremacy, the Court held that RFRA exceeded Congressional power under Section V of the Fourteenth Amendment. Congress’s failure to compile a factual record justifying the federal government’s intrusion on state prerogatives led the Court to conclude that RFRA lacked “congruence and proportionality” with the asserted state-level harms. In some applications, RFRA may still apply a Sherbert-like test to federal action, but the law remains unenforceable against the states.

At the same time, City of Boerne gave Congress a roadmap for a second shot at re-instituting strict scrutiny for at least certain classes of claims. Congress did so three years later in RLUIPA, subjecting state and local land use decisions that burden religious liberty to strict scrutiny. Congress’s detailed record about the purported need for the renewal of strict scrutiny in

118. Id. §§ 2000cc(a)(1), cc-1.
119. City of Boerne, 521 U.S. at 534, 535.
120. Id. at 519.
121. Id. at 530.
this area has allowed RLUIPA to survive various constitutional challenges. And therein lies the first of several key reasons for Track II claims’ resurgence: given RFRA’s inapplicability to the states—where the vast majority of cases are filed—Track I incidental burden claims are subject only to rational basis review under the Smith regime. Yet Track II claims to avoid land use regulations under RLUIPA can often receive strict scrutiny. Thus, in states that have neither passed their own state RFRAs nor interpreted their constitutions as codifying a Sherbert-like standard, land use decisions represent a central battleground where religious plaintiffs may attain heightened review.

Despite RLUIPA’s original purpose as an anti-discrimination statute, courts have interpreted its provisions as reflecting a legislative mandate that religious concerns are to be prioritized over environmental protections. In the words of one federal judge, religious uses “are favored property uses,” requiring state authorities “to weigh their needs heavily against environmental concerns.” Unlike RFRA’s general command to restore Sherbert, a case that had systematically failed to produce broad exemptions, RLUIPA’s hyper-specific mandate has emboldened plaintiffs and jurists. RLUIPA—as the Smith Court prophesied—has created a pathway for religious litigants to assert Track II claims against generally applicable land use regulations put in place to protect the environment.


126. And nineteen states, including some of the nation’s most populous and economically important, such as California and New York, have not. See Juliet Eilperin, 31 States Have Heightened Religious Freedom Protections, WASH. POST (Mar. 1, 2014), https://www.washingtonpost.com/news/the-fix/wp/2014/03/01/where-in-the-u-s-are-there-heightened-protections-for-religious-freedom/?utm_term=.3d90f15d1f6f.

127. See Petra Presbyterian Church v. Vill. of Northbrook, 489 F.3d 846, 851 (7th Cir. 2007) (justifying RLUIPA’s “substantial burden” test as a protection against intentional discrimination); see also Douglas Laycock & Luke W. Goodrich, RLUIPA: Necessary, Modest, and Under-Enforced, 39 FORDHAM URB. L.J. 1021, 1025 (2012) (concluding that “twelve years of precedent show that RLUIPA was and is needed” to address the “hostility and discrimination” that churches face).

128. See Bray, supra note 124, at 45 (”[I]ncreasing willingness to accord special solicitude to religious institutions has . . . threatened to subvert many legitimate aims of local government in the land use context.”).

Understanding that RLUIPA challenges might lead to costly and protracted litigation—with the possibility of having to pay attorney’s fees should they lose—localities tread lightly when enforcing their land use restrictions against religious entities. Indeed, “megachurches and other expanding religious institutions” have evaded environmental laws and secured exemptions from “environmental land use regulations that otherwise ought to apply, based on little more than the institutions’ allegedly distinctive religious nature.” Such exemptions are particularly problematic when considering that “the environmental impact of religious land development has steadily grown in recent years, to the point where it now approximates or exceeds the environmental impact of large-scale commercial land development.”

RLUIPA’s expansive text has bolstered the resurgence of Track II claims. RLUIPA broadly defines “religious exercise” to include “any exercise of religion, whether or not compelled by, or central to, a system of religious belief.” Religious plaintiffs are able to frame their “religious exercise” in general terms, and current doctrine prohibits courts from questioning the validity of claimants’ beliefs. RLUIPA also imprecisely defines a “land use regulation” as “a zoning or landmarking law, or the application of such a law, that limits or restricts a claimant’s use or development of land . . . .” Courts have thus been left with “the daunting challenge of determining the boundaries of RLUIPA’s application and force.”

Responding to this challenge, courts have broadly construed RLUIPA’s language to sweep under its purview a wide array of environmental regulations, which are often intertwined with zoning laws. Zoning laws

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130. See 42 U.S.C. § 1988(b) (2012) (permitting award of attorney’s fees to prevailing religious claimants); see also Bray, supra note 124, at 67 (“[T]he most practically significant aspect of the statute may be the discretion it affords courts to award prevailing religious claimants their attorneys’ fees.”).
131. Bray, supra note 127, at 84.
132. Id. at 65.
134. See Bray, supra note 127, at 83 (“[C]ourts tend to eschew any close examination of the sincerity or the centrality of the religious beliefs at issue . . . .”).
136. Baker, supra note 11, at 1215.
often take indirect aim at environmental concerns, and “local land use laws are increasingly being used to accomplish a wide range of environmental objectives.” Recently, zoning laws have been “implemented with the sole, not incidental, goal of protecting environmental interests.” Erosion control measures, riparian setbacks, storm water management protocols, and tree mitigation requirements all serve the principal goal of ensuring “that land users control use of their property and limit damage to natural resources and ecosystems.” Some scholars’ assertions that “environmental justice goes to the core of traditional land use decisions,” as “local land use laws have morphed into local environmental land use laws,” are thus unsurprising.

Despite the upswing in environmentally conscious zoning efforts, RLUIPA presents new challenges for local governments defending such regulations. When the government fails to show either a compelling interest or narrow tailoring, a religious plaintiff can evade an environmental zoning regulation “without ever having to prove that its religious exercise was thwarted because of discrimination.” RLUIPA thus “provides a powerful legal tool to congregations that wish to ... build a parking lot or expand their buildings in defiance of municipal restrictions.” As one commentator put it, “[a]ny time a church is denied permission to use its land for any church-related purpose—including the construction of a high-rise business building, a towering tabernacle or a radio antenna—RLUIPA intervenes.”

Some have even argued that “by allowing religious entities to use their property in ways that no other land user can, [RLUIPA] threatens to undermine local environmental protection efforts nationwide.”

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138. Bray, supra note 124, at 65 (“Large parking lots lead to increased mobile source air pollution, storm water runoff, and erosion.”).
140. Zale, supra note 124, at 213; see Stewart E. Sterk, Structural Obstacles to Settlement of Land Use Disputes, 91 B.U. L. REV. 227, 239 (2011) (noting that zoning laws in an increasing number of states now require environmental review).
144. Serkin & Tebhe, supra note 11, at 4, 15.
145. Id. at 11, 23 n.81.
146. Id. at 2.
147. Lawrence G. Sager, Panel One Commentary, 57 N.Y.U. ANN. SURV. AM. L., July 2001, at 14; see also Bray, supra note 124, at 64 (documenting RLUIPA’s intervention when religious entities are prevented from using their own land as they see fit).
148. Zale, supra note 124, at 210 (“RLUIPA’s message to churches is that they can expand without regard to the detrimental impact of their development.”).
Westchester Day School v. Village of Mamaroneck illustrates the renewed success of Track II claims.\textsuperscript{149} In that case, a private Orthodox Jewish day school sought a modification from its existing special permit to construct a 44,000-square-foot building and to make related improvements to its campus.\textsuperscript{150} Under the village zoning ordinance, the school’s request required approval from the Village administrative body empowered to consider applications for special permits.\textsuperscript{151} After a public hearing, the Village permitted the project to proceed\textsuperscript{152} despite environmental concerns about the proposed parking lot and the need to “preserv[e] the existing mature trees on site.”\textsuperscript{153} After public outcry, and upon reconsideration of the environmental impact, the Village rescinded the decision and instead required the school to undertake additional environmental studies.\textsuperscript{154}

The school sued, arguing in part that the Village’s rescission of its permit violated RLUIPA.\textsuperscript{155} After protracted litigation, the district court concluded that there were less restrictive means available to address the environmental concerns, as “the evidence indicates that any adverse environmental impact of the size of the building and the set-back . . . could have been mitigated . . . through imposition of conditions,” instead of outright rejection.\textsuperscript{156} The court then concluded that under RLUIPA, “religious schools are favored property uses[,] and zoning boards are adjured to weigh their needs heavily against environmental concerns.”\textsuperscript{157} A weighing of the school’s “pressing need against the relatively minor adverse environmental impacts” compelled a finding that the Village’s rescission of the special permit contravened RLUIPA.\textsuperscript{158}

Another example of renewed Track II success involved a Boulder, Colorado megachurch’s objection to several neutral, environmental regulations. Boulder maintains “a comprehensive system of land use regulations designed to mitigate the slow chokehold of ever-encroaching development on wetlands and open space, on groundwater and soils, and on wildlife and native species.”\textsuperscript{159} The Boulder-based Rocky Mountain Christian Church proposed building a 6,500-square-foot chapel and

\textsuperscript{149} Westchester Day Sch. v. Vill. of Mamaroneck, 417 F. Supp. 2d 477, 572–73 (S.D.N.Y. 2006), aff’d, 504 F.3d 338 (2d Cir. 2007) (holding defendants “substantially burdened WDS’s religious exercise without a compelling governmental interest exercised in the least restrictive means, in violation of the Religious Land Use and Institutionalized Persons Act”).

\textsuperscript{150} Id. at 483.

\textsuperscript{151} Id. at 483, 505.

\textsuperscript{152} Id. at 509–10.

\textsuperscript{153} Id. at 510.

\textsuperscript{154} Id. at 512.

\textsuperscript{155} Id. at 482–83.

\textsuperscript{156} Id. at 553.

\textsuperscript{157} Id. at 572.

\textsuperscript{158} Id.

\textsuperscript{159} Zale, supra note 124, at 208.
expanding its school by 57,500 square feet. County land use staff opposed the proposal because it would have harmed the surrounding environment. The County denied the plan, and the Church sued under RLUIPA, arguing that the denial, which stemmed from environmental zoning law, substantially burdened its right to religious exercise. The district court sided with the plaintiffs, finding the burden on religious practice substantial. The Tenth Circuit affirmed, holding “that Boulder’s zoning laws, limiting development in environmentally sensitive rural areas, violated the megachurch’s right to religious exercise under . . . federal law.” The Tenth Circuit’s decision, according to one commentator, “foreshadow[s] how RLUIPA could lead to a ‘death by a thousand cuts’ for environmental protection efforts across the nation.” Put differently, the decision represents the viability of Track II claims and the use of religious liberty as a sword to evade environmental regulations.

Paradoxically, though religious institutions have successfully asserted Track II claims in the wake of RLUIPA, religious adherents asserting Track I claims under RFRA have fared poorly, despite each statute purporting to codify the same standard. As mentioned, RFRA’s invalidation as applied to the states necessarily forecloses many potential state-level claims under the Smith regime. And though courts have taken RLUIPA as a mandate to vigorously police land use regulations, RFRA’s general codification of pre-Smith case law leaves Track I claims (when RFRA even applies to them) susceptible to all the same mechanisms by which courts traditionally declined to grant exemptions under Sherbert.

Take, for instance, Navajo Nation, a case in which a Native American group mounted a RFRA challenge to the Forest Service’s approval of a plan to convert wastewater into artificial snow to establish a ski resort on a tribal sacred site. A three-judge panel of the Ninth Circuit concluded that the

160. Rocky Mountain Christian Church v. Bd. of Cnty. Comm’rs, 613 F.3d 1229, 1234 (10th Cir. 2010).
161. Id. at 1234–35.
162. Id. at 1230, 1235.
164. Zale, supra note 124, at 209.
165. Id. at 222.
166. Id.
167. See Zale, supra note 124, at 217–18. Theoretically, nothing bars the assertion of an RLUIPA Track I claim. Religious entities could rely on the statute to challenge a local land use law that simultaneously harmed the environment and burdened religious practice; for instance, if a locality changed zoning laws to permit constructing smog-producing factories around a church that imposed a nuisance on parishioners. Historically speaking, however, given the convergence of zoning and environmental regulations, RLUIPA challenges have been of the Track II variety. See supra Part II (describing RLUIPA challenges to evade environmental regulations).
Forest Service’s approval “violates the RFRA.”\textsuperscript{169} On review of the panel’s decision, the \textit{en banc} Ninth Circuit agreed that “the Native Americans held sincere religious beliefs and were engaged in the exercise of religion on the Peaks.”\textsuperscript{170} Yet it concluded that the initial burden of proof was on the Native Americans to establish that the wastewater scheme “placed a substantial burden on their exercise of religion.”\textsuperscript{171} Under the court’s threshold analysis, the wastewater “did not place a cognizable substantial burden upon them,” and thus their claim failed to trigger strict scrutiny.\textsuperscript{172} Echoing \textit{Lyng}, the \textit{en banc} court overrode the three-judge panel, disagreeing that the burden to religious practice was substantial despite “acknowledging that there may be a serious diminishment of the spiritual fulfillment of Native Americans who practice their religion on this peak,” and that the project was “offensive to their religious sensibilities.”\textsuperscript{173} Compared to the success of Track II claims under RLUIPA, it is certainly “ironic that RFRA [has] failed to protect Native American[s], considering that it was enacted in response to [\textit{Smith}], which centered on Native American religious beliefs.”\textsuperscript{174}

Other salient and recent Track I failures have reinforced the Track I-Track II disparity. In response to the Dakota Access Pipeline (DAPL) construction project—the genesis of a yearlong protest effort—the Standing Rock Sioux Tribe filed a RFRA challenge in 2017.\textsuperscript{175} In its complaint, the Tribe asserted that “numerous . . . spiritual sites [exist] beneath the waters of the proposed DAPL pipeline crossing,” and that the water from the lake “play[ed] a central role in the religious and cultural beliefs of the Tribe,” as it was “used in numerous traditional ceremonies.”\textsuperscript{176} Allowing the construction of the pipeline would thus “negatively impact the Tribe’s and its members’ ability to conduct traditional medicinal and spiritual ceremonies and practices.”\textsuperscript{177}

\textsuperscript{169} Navajo Nation v. U.S. Forest Serv., 479 F.3d 1024, 1029 (9th Cir. 2007), overruled by 535 F.3d 1058 (9th Cir. 2008) (en banc); Wiseman, \textit{supra} note 52, at 152–53.

\textsuperscript{170} \textit{Navajo Nation}, 535 F.3d at 1073 (“Plaintiffs in this case, despite their sincere belief that the use of recycled wastewater on the Peaks will spiritually desecrate a sacred mountain, cannot dictate the decisions that the government makes in managing ‘what is, after all, its land.’”); Wiseman, \textit{supra} note 48 at 152.

\textsuperscript{171} \textit{Navajo Nation}, 535 F.3d at 1068; Wiseman, \textit{supra} note 48, at 152.

\textsuperscript{172} Wiseman, \textit{supra} note 48, at 153; see \textit{Navajo Nation}, 535 F.3d at 1070 ("Applying Sherbert and Yoder, there is no 'substantial burden' on the Plaintiffs' exercise of religion in this case.").

\textsuperscript{173} \textit{Navajo Nation}, 535 F.3d at 1070; Wiseman, \textit{supra} note 48, at 153.

\textsuperscript{174} Zale, \textit{supra} note 124, at 216 n.62. Certainly, “[a] key underlying distinction between \textit{Navajo Nation} and most RLUIPA cases is that the religious entity in \textit{Navajo Nation} had no property interest in the subject land . . . RLUIPA requires that a religious entity must have a property interest in the land at issue.” \textit{Id.}


\textsuperscript{176} \textit{Standing Rock Sioux Tribe}, 239 F. Supp. 3d at 86.

\textsuperscript{177} \textit{Id.}
Despite concluding that the Tribe was “likely to successfully establish a sincerely held belief that the presence of oil in the Dakota Access pipeline running under Lake Oahe interferes with its members’ religious ceremonies,” the district court nevertheless held the Tribe “unlikely to succeed on the merits of its RFRA claim.” It reasoned that “Lyng likely prevents the Tribe from showing that the Corps’ decision to grant an easement to Dakota Access to operate an oil pipeline under Lake Oahe constitutes a substantial burden on its members’ free exercise of religion.” Under Lyng’s heightened objective burden inquiry, tribes were once again blocked from reaching strict scrutiny.

This lack of success for Track I claimants extends beyond the rejection of just Native Americans’ RFRA-based challenges. Most recently, the Supreme Court declined to review a case involving a group of Roman Catholic nuns, the Adorers of the Blood of Christ, who oppose the construction of a high-volume natural gas pipeline directly through their property. Inspired by Pope Francis’s 2015 encyclical, the Adorers embrace a sincere religious duty to protect and nurture the unaltered land. After the Federal Energy Regulatory Commission issued a conditional certificate to build the pipeline, “the Adorers filed a claim pursuant to [RFRA] in district court to prospectively enjoin the construction and use of the pipeline on their property.” The lower courts ultimately dismissed their appeal in light of a complicated jurisdictional issue discovered during the litigation, and the Supreme Court declined to grant review.

But if history provides any insight, the Adorers’ claim might have met a similar fate on the merits.

IV. RECTIFYING THE DISPARITY BETWEEN TRACK I AND TRACK II CLAIMS

The free exercise clause was framed some 230 years ago in recognition of the fact that “small minorit[ies]” would entertain “in good faith . . . religious belief[s]” that engendered “little toleration or concern” from society’s most powerful interests. The guarantee of free exercise, like the Bill of Rights itself, sought “to withdraw certain subjects from the vicissitudes of political controversy.” Yet the historical arc detailed in the preceding pages stands in contrast to those

178. Id. at 91.
179. Id. at 100.
180. Standing Rock Sioux Tribe, 239 F. Supp. 3d at 100.
182. Id. at 191.
184. Adorers of the Blood of Christ, 897 F.3d at 190.
principles. Religious minorities—like the Sioux, the Yurok, and the Navajo—and the politically disenfranchised—like the Adorers—have found no refuge in their Track I claims. Large institutions like some megachurches, however, have benefitted from the Track II model, using religious liberty to gain exemptions from environmental protections. Whatever the independent merits of either Track, there is no persuasive justification for this Track I-Track II disparity. In response, this Essay now advocates three potential solutions.

The first is to alter the current interpretation of RLUIPA to principally target discriminatory governmental action. When RLUIPA was passed in response to the Court’s invalidation of RFRA as applied to the states, Congress intended the Act to address the “nationwide problem” of discrimination against religious entities in the zoning process. Congress did not aim to provide “a free pass” to religious entities that elevates religious land use above neutral environmental zoning laws. Instead, RLUIPA was fashioned with a special concern for “[s]maller and less mainstream denominations”—entities that are particularly vulnerable to “discriminatory regulation” from local governments.

Yet at present, RLUIPA is interpreted to grant religious entities “advantages that no other land users enjoy, as well as providing them with economic and legal incentives to intimidate local governments.” Rather than smoke out discrimination, RLUIPA “has instead extended sweeping exemptions and unnecessary leverage to powerful religious organizations regardless of whether they have faced or are facing discrimination.” The statute’s imprecise language, broad judicial interpretations, and the threat of attorney’s fees all combine to lend religious claimants “substantial leverage when disputes arise.” In some cases, claimants with substantively meritless claims can leverage the threat of litigation to garner favorable exemptions from neutral environmental zoning regulations. As one commentator put it, “the prospect of having to [pay attorney’s fees],

187. 106 Cong. Rec. 16698, 16699 (2000) (statement of Sen. Hatch) (“[D]iscrimination against religious uses is a nationwide problem.”); see also id. at 16698 (explaining the “massive evidence” of widespread discrimination against churches); Zale, supra note 124, at 229 (proposing that RLUIPA be “refo[ocu]sed . . . on its intended purpose of eliminating religious discrimination.”).
188. Zale, supra note 124, at 236.
190. Zale, supra note 124, at 238.
191. Bray, supra note 124, at 102.
192. Id. at 67.
193. Id. at 102 (“[M]any religious organizations have been able to dictate the terms of their land use to local governments, impairing local governments’ ability to plan for and control externalities arising out of a wide range of land uses not previously considered particularly religious.”).
combined with the murky nature of the statute’s substantive provisions, frequently creates substantial pressure on local governments to compromise or settle even relatively weak RLUIPA claims. To arrest litigants from prevailing on such meritless Track II claims, Congress could revisit RLUIPA’s text, clarifying its anti-discrimination purpose and making attorney’s fees available only when discrimination is readily apparent.

Second, Congress could revisit RFRA’s text and explicitly allow for Track I claims. Though the Court has foreclosed RFRA’s application to the states, cases like Navajo Nation and Standing Rock Sioux Tribe reveal that it could still perform important work at the federal level. Yet the central barrier remains the Lyng decision, which was incorporated into RFRA when Congress codified pre-Smith case law. To circumvent Lyng, Congress could simply amend the statute to clarify that damage or destruction of religious sites is cognizable under the statute’s strict scrutiny standard. Though the nearly unanimous coalition that passed RFRA in 1993 is today “fraying at the seams and is in danger of permanent disintegration,” such a statutory modification would be circumscribed. It would also not engender the typical concerns about third-party harms, given Track I plaintiffs’ sincerity and mere desire to preserve sacred religious sites.

Third, the Supreme Court could revisit Smith and legitimize Track I claims. Though revision of precedent ordinarily would be an ambitious

194. Id. at 67–68.
195. This Essay, unlike others, contends that remedying the current disparity between Track I and Track II claims does not require RLUIPA’s repeal. In fact, RLUIPA serves a valuable purpose in protecting religious entities from discriminatory governmental conduct, including the discriminatory use of environmental zoning regulations. See Roman P. Storzer & Blair Lazarus Storzer, Christian Parking, Hindu Parking: Applying Established Civil Rights Principles to RLUIPA’s Nondiscrimination Provision, 16 RICH. J.L. & PUB. INT. 295, 295–96 (2013) (“While there is no question that local zoning boards and other regulatory bodies are often motivated by sincere concerns about matters such as environmental protection, and adherence to building codes, it is also true that such reasons are often used as a façade for invidious discrimination.”).
196. Courts engage in similar balancing under other statutes, such as the decision whether to award attorney’s fees in copyright infringement cases. See Fogerty v. Fantasy, Inc., 510 U.S. 517, 534 n.19 (1994) (recognizing nonexclusive factors to consider in making awards of attorney’s fees).
197. See supra Part III (describing compelling but unsuccessful federal RFRA claims).
198. See supra Parts I, II & III (describing pre-Smith case law and RFRA’s codification of it).
200. And third-party harms are a concern only if one assumes that principle exists in free exercise analysis. See, e.g., Christopher C. Lund, Religious Exemptions, Third Party Harms, and the Establishment Clause, 91 NOTRE DAME L. REV. 1375, 1376 (2016). A possible example is the use of religious exemptions to engage in behavior that some may label invidious discrimination; for instance, declining based on religious convictions to sell gay couples custom-made wedding cakes. See also Douglas NeJaime & Reva Siegel, Religious Exemptions and Anti-Discrimination Law in Masterpiece Cakeshop, YALE L.J.F. 201 (2018). As in Lyng, the mere preservation of an isolated sacred site would not effect invidious discrimination or even a particularly significant third-party harm. The Tribes did not argue that the logging activity should be categorically barred, only that it should not occur upon their sacred site.
request, the Court has already agreed to reconsider Smith this term. If the Court overrules that decision and re-institutes a Sherbert-like religious liberty regime, it should make clear that Lyng was wrongly decided. The Lyng Court adopted its demanding and novel substantial burden inquiry to avoid strict scrutiny in that case, likely having realized the government had no compelling interest in building its logging road. Instead, the government should have lost. Though the Court feared numerous religious attacks upon the government’s central operations, the compelling interest prong of the strict scrutiny test had previously functioned as an adequate gatekeeper. Challenging merely peripheral applications of governmental power—such as the construction of an isolated logging road that, in turn, destroyed central components of a religious system—should have been a core application of the Sherbert test.

CONCLUSION

Religious liberty doctrine should be forged into a shield for religious adherents, or it should lay down its arms altogether in the field of environmental law. But it should not function solely as a sword against these regulations. The solutions proposed above, separate or combined, are starting points in rectifying this Track I-Track II disparity. They would once again make environmentalism and religious liberty natural allies, providing the faithful new legal mechanisms to protect “Our Common Home.”


WADING THROUGH THE GROUNDWATER OF CWA JURISDICTION: MAUI’S “FUNCTIONAL EQUIVALENT” STANDARD

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ABSTRACT

The U.S. Supreme Court created an imprecise retrospective test for determining Clean Water Act (CWA) jurisdiction when the Court fashioned a “functional equivalent of a direct discharge” test that emphasized time and distance that the pollutant traveled from a point source through a conduit to a navigable water body. The seven-factor hindsight test was established to address the circumstance where the pollutant travels through an intermediary (such as groundwater) to reach the navigable water. County of Maui v. Hawaii Wildlife Fund, 140 S. Ct. 1462 (2020).

How do we achieve the national objective of the CWA “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” without undermining the states’ jurisdictional right to regulate groundwater? Preserving this balance (without creating serious CWA loopholes) was at the heart of Justice Breyer’s 6-3 majority decision in Maui. This article explains the reasoning of the Court and the pragmatic difficulties in applying its “functional equivalent of a direct discharge” test, in addition to examining the state and federal role under the CWA.

A hindsight test creates unnecessary costs and hurdles for determining CWA jurisdiction for citizen suit NGOs, businesses, and regulators. Businesses and municipalities need to know upfront whether their prospective discharges require CWA National Pollutant Discharge Elimination System (“NPDES”) permits. The 47 states with delegated NPDES authority also need more specific guidance. The test hinders the proactive CWA goal of preventing and promptly mitigating contamination of our nation’s waterways.
INTRODUCTION

How do we achieve the national objective of the Clean Water Act (CWA) “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” \(^1\) without undermining the states’ jurisdictional right to regulate groundwater? Preserving this balance (without creating serious CWA loopholes) was the goal of the majority decision in County of Maui v. Hawaii Wildlife Fund et al. ("Maui").\(^2\)

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\(^2\) Cnty. of Maui v. Hawaii Wildlife Fund et. al. ("Maui"), 140 S. Ct. 1462, 1477 (2020) ("Decisions should not create serious risks either of undermining state regulation of groundwater or of creating loopholes that undermine the statute’s basic federal regulatory objectives.").
Bryer, writing for the 6-3 majority, established a “functional equivalent” test. Under the new standard, a permit issued pursuant to § 301 of the CWA National Pollutant Discharge Elimination System (NPDES) is “applicable to a discharge (from a point source) of pollutants that reach navigable waters after traveling through groundwater if that discharge is the functional equivalent of a direct discharge from the point source into navigable waters.”

While admitting that the “functional equivalent” test was not a “bright line” test, the majority concluded that the analytical flexibility was necessary to protect the integrity of national waters from pollutants that reach national waters through a conduit. To guide this analysis, the majority included a nonexclusive list of factors to be considered:

1. transit time;
2. distance traveled;
3. the nature of the material through which the pollutant travels;
4. the extent to which the pollutant is diluted or chemically changed as it travels;
5. the amount of pollutant entering the navigable waters relative to the amount of the pollutant that leaves the point source;
6. the manner by or area in which the pollutant enters the navigable waters; and
7. the degree to which the pollution (at that point) has maintained its specific identity.

Of these factors, “time” and “distance” traveled are the most important in determining “[w]hether pollutants that arrive at navigable waters after traveling through groundwater are ‘from’ a point source depends upon how similar to (or different from) the particular discharge is to a direct discharge.” The Supreme Court vacated the Ninth Circuit judgment and remanded the case for application of that criteria.

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3. Id. at 1468 (discussing the distribution of the court in Maui, Roberts, Ginsburg, Sotomayor, Kagan and Kavanaugh joined Breyer in the majority, with Thomas, Alito and Gorsuch dissenting). This has become the “Roberts’ court,” with Chief Justice Roberts siding with the majority in nearly all of the cases so far this term.
5. Id. at 1477–78.
6. Id. at 1476–77.
7. Id. at 1476–77.
8. Id. at 1478.
This article discusses whether the Court’s “functional equivalent” test adds clarity or confusion to the determination of CWA permitting jurisdiction and the costs of CWA compliance.

I. ANALYSIS OF MAUI AND RELATED CASES

The legal question before the Supreme Court in the Maui decision is “whether the Act [CWA] ‘requires a permit when pollutants originate from a point source but are conveyed to navigable waters by a nonpoint source,’ here groundwater.” In his majority opinion, Justice Breyer established a new standard: a permit issued under § 301 of the CWA NPDES is “applicable to a discharge (from a point source) of pollutants that reach navigable waters after traveling through groundwater if that discharge is the functional equivalent of a direct discharge from the point source into navigable waters.”

A person (including a business or municipality) must obtain a CWA NPDES permit to (1) discharge (2) a pollutant (3) to navigable waters (4) from a point source. The interpretation of the interconnection of those components lies at the heart of the dispute in Maui. The CWA prohibits the “discharge of any pollutant by any person,” defining the “discharge of a pollutant” as “any addition of any pollutant to navigable waters from any point source.” The CWA defines “pollutant” broadly. Under the CWA and most relevant to the Court’s decision, point sources expressly include “wells” under its definition, which applies to “any discernible, confined, and discrete conveyance, . . . from which pollutants are or may be discharged.”

The Maui case specifically addressed discharges from wells. In Maui, the municipal wastewater treatment plant for West Maui (Lahaina Wastewater Reclamation Facility) injected four wells (point sources) with 2.8 million to 5 million gallons of treated sewage effluent

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10. Id. at 1477.
11. Headwaters, Inc. v. Talent Irrigation Dist., 243 F.3d 526, 532 (9th Cir. 2001).
14. See 33 U.S.C. § 1362(6) (defining the term “pollutant” as “dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural wastes discharged into water,” with some oil and gas exceptions).
15. See 33 U.S.C. § 1362(14) (defining the term “point source” as “any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged … not includ[ing] agricultural stormwater discharges and return flows from irrigated agriculture.”).
daily. A 2013 tracer dye study showed that 64% of the treated wastewater injected into wells 3 and 4 reached the Pacific Ocean, demonstrating a “hydrological connection.” The County of Maui did not obtain an NPDES permit. All parties concede that the wells are point sources and that some of the effluents reached the ocean after traveling through groundwater. The Ninth Circuit Court of Appeals affirmed the district court ruling that the county violated the CWA, holding that: (1) the county discharged pollutants from a point source; (2) the pollutants are fairly traceable from the point source to a navigable water such that the discharge is the functional equivalent of a discharge into the navigable water; and (3) the pollutant levels reaching navigable water are more than de minimis. Plaintiffs—respondents in the CWA citizen suit include the Hawai‘i Wildlife Fund, Sierra Club-Maui Group, Surfrider Foundation, and the West Maui Preservation Association. A half-million underground wastewater injection programs could be affected by the Maui decision.

Justice Breyer created a conundrum by adopting the “functional equivalent” standard, while purporting to reject the “traceability” standard of the Ninth Circuit. The Ninth Circuit linked the two together, finding a “fairly traceable” discharge to be “the functional equivalent of a direct discharge.” It cannot be said that traceability of the pollutant from its source to the navigable water is irrelevant, so traceability must be a necessary, but not a sufficient component in the analysis of what is a “functional equivalent” of a direct discharge. It would have made more sense to adopt the Ninth Circuit’s three-part test and add details related to the “functional equivalent” portion.

During oral arguments, Justice Roberts raised concerns that “traceability” as a technological issue was not a sufficient limitation on
permitting authority. The dissenting judges concurred with the majority in its rejection of the “traceability” and “proximate cause” requirements that were postured by the respondent environmental groups in the Maui oral arguments.

Justice Breyer tried to find the middle ground in requiring federal permits to preserve the integrity of our nation’s waters. He did not want a pipe owner to be able to use a loophole to avoid a permit requirement by “simply mov[ing] the pipe back, perhaps only a few yards, so that the pollution must travel through at least some groundwater before reaching the sea.” Nor did he want to impose permitting requirements on a business whose diluted pollutant took years and great distances to slowly and circuitously migrate toward navigable waters. So Breyer’s “functional equivalent of a direct discharge” standard that emphasizes time and distance (while considering five other nonexclusive factors) seeks to strike that balance. The objective is to avoid “serious risks either of undermining state regulation of groundwater or of creating loopholes that undermine the statute’s basic federal regulatory objectives” to “restore and maintain the chemical, physical and biological integrity of the Nation’s waters.”

The case focused on the linguistic interpretation of the prepositions “from” and “to.” The CWA expressly prohibits the addition of a pollutant “from” a point source “to” navigable waters. The majority opinion in Maui concludes that Congress was referring to the origin (“any point source”) “from” which the pollutant originated and “to” the destination (“navigable waters”) to which the pollution flowed. Congress specified the pollutants must come from the point source, but did not specify that pollutants had to originate directly from a point source. Justice Breyer adopted the “every

27. Id. at 36.
28. Maui, 140 S. Ct. 1462, 1470 (2020) (Breyer, J., majority); Id. at 1482 (Thomas, J., dissenting); Id. at 1490 (Alito, J., dissenting).
30. Maui, 140 S. Ct. at 1473; See also Transcript of Oral Argument at 30, Maui v., 140 S. Ct. 1462 (No. 18-260) (questioning from Justice Breyer what if the pipe does not discharge directly into the ocean, the pollutant will have to travel through air, over land or through groundwater to reach the ocean, when is that the “functional equivalent” of a direct discharge from a point source?).
31. Maui, 140 S. Ct. at 1470, 1476.
32. Id. at 1476–77, (listing relevant factors depending on particular circumstances of a case: (1) transit time, (2) distance traveled, (3) the nature of the material through which the pollutant travels, (4) the extent to which the pollutant is diluted or chemically changed as it travels, (5) the amount of pollutant entering the navigable waters relative to the amount of the pollutant that leaves the point source, (6) the manner by or area in which the pollutant enters the navigable waters, (7) the degree to which the pollution (at that point) has maintained its specific identity).
33. Id. at 1477.
35. See 33 U.S.C. § 1312 (explaining the prohibition of discharges from a point source to navigable waters).
day meaning . . . that the object of ‘from’ is a ‘point source’ – a source, again, connoting an origin. In oral arguments, Justice Kagan noted that the CWA specifies “to,” not “into” navigable waters, and the purpose of the law is to regulate the point source. The function of the NPDES permits are to control and limit the discharge of pollutants from point sources to navigable waters that could compromise the integrity of those waters. The CWA provisions do not include an express exception for discharges that travel through groundwater. The means of conveyance of the pollutant from the point source to the navigable water alone should not preclude the necessity of obtaining a NPDES permit—contrary to the County of Maui’s position that how the pollution got there is more relevant than where the pollution originated.

In his concurring opinion, Justice Kavanaugh, attempts to reconcile the Maui majority position with that of Justice Scalia in the Rapanos decision by recognizing that “the discharge into intermittent channels of any pollutant that naturally washes downstream likely violates § 1311(a), even if the pollutants discharged from a point source does not emit ‘directly into’ covered waters, but pass ‘through conveyances’ in between them.” Citing Justice Scalia, Justice Kavanaugh further emphasizes that polluters should not “evade the permitting requirement of §1342(a) simply by discharging their pollutants into noncovered intermittent watercourses that lie upstream of covered waters.” Justice Kavanaugh applied this test to the situation and concluded that “the fact that the pollutants from Maui’s wastewater facility reach the ocean via an indirect route does not itself exempt Maui’s facility from the Clean Water Act’s permitting requirement for point sources.” Justice Kavanaugh is comfortable with the Maui majority’s “functional

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41. See 118 CONG. REC. 10,666-69 (1972) (rejecting the Aspin Amendment); See Allison Kvien, Note, Is Groundwater That Is Hydrologically Connected To Navigable Waters Covered Under The CWA?: Three Theories of Coverage & Alternative Remedies for Groundwater Pollution, 16 MINN. J.L. SCI. & TECH. 957, 979–80 (noting the CWA’s lack of an explicit provision regulating discharges that travel through groundwater).
43. See Maui, 140 S. Ct. at 1478 (Kavanaugh, J., concurring) (citing Rapanos v. United States, 547 U.S. 715, 743 (2006)). While Justice Kavanaugh confidently relies on Rapanos, Justice Scalia, who was describing conclusions reached by lower courts, might be surprised by this citation painting him as an environmentalist.
44. Maui, 140 S. Ct. at 1478 (Kavanaugh, J., concurring) (citing Rapanos, 547 U.S. at 743).
45. Maui, 140 S. Ct. at 1478 (Kavanaugh, J., concurring) (citing Rapanos, 547 U.S. at 742–743).
46. Maui, 140 S. Ct. at 1478 (Kavanaugh, J., concurring).
equivalent” test, because it “seeks to translate the vague statutory text into more concrete guidance,” focusing on time and distance factors.\textsuperscript{47}

Justice Scalia’s plurality opinion in \textit{Rapanos} expressly states that the Court in \textit{Rapanos} was not deciding the issue of whether a polluter can evade CWA enforcement “by discharging their pollutants into noncovered intermittent watercourses that lie upstream of covered waters.”\textsuperscript{48} In dicta, however, Justice Scalia cited a Western District of Tennessee lower court decision that found CWA jurisdiction where the municipal sewer system point source was separated from the covered navigable waters.\textsuperscript{49} To support this conclusion, Justice Scalia referenced appellate and lower court decisions in which those courts held an "intervening channel to be a point source,"\textsuperscript{50} since the CWA does not expressly require that the addition of the pollutant be “directly” from the point source to the navigable water, but rather the CWA includes the “addition of any pollutant to navigable waters.”\textsuperscript{51} Using this reference as context, Justice Kavanaugh’s concurring opinion emphasized this language from Justice Scalia’s plurality decision in \textit{Rapanos}. Kavanaugh acknowledged that “lower courts have held that the discharge into intermittent channels of any pollutant that naturally washes downstream likely violates § 1311(a), even if the pollutants discharged from a point source do not emit ‘directly into’ covered waters but pass ‘through conveyances’ in between.”\textsuperscript{52} Kavanaugh, therefore, concluded that pollutants from Maui’s wastewater facility are not exempt from CWA permitting requirements, despite reaching the ocean via an indirect route. In doing so, he elevated that language to greater precedential value in his \textit{Maui} concurrence, where the aforementioned issue of pollutants flowing through an intermediate conveyance was directly before the Court.

\textsuperscript{47}. \textit{Id.} at 1479 (Kavanaugh, J., concurring), with emphasis on the time and distance factors.

\textsuperscript{48}. \textit{Rapanos} v. United States, 547 U.S. 715, 743 (2006). Instead, the issue before the Court in \textit{Rapanos} was whether wetlands must have a continuous surface connection to bodies that are ‘waters of the United States’ in their own right to come within the CWA jurisdiction of the Army Corps of Engineers or whether the term “navigable waters” in the CWA includes wetlands that are not adjacent to waters that are navigable in fact. \textit{Id.} at 740-742. Justice Scalia’s plurality opinion rejected wetlands that were “physically isolated waters” with only an “intermittent, physically remote hydrologic connection to ‘waters of the United States,’” as not being considered sufficiently “adjacent to” or “adjoin[ed to]” waters of the U.S. \textit{Id.}

\textsuperscript{49}. \textit{See id.} at 743 (citing United States v. Velsicol Chemical Corp., 438 F. Supp. 945, 946–947 (W.D. Tenn. 1976)).

\textsuperscript{50}. \textit{Rapanos}, 547 U.S. at 743.

\textsuperscript{51}. \textit{Compare Maui}, 140 S. Ct. at 1478 (Kavanaugh, J., concurring) (citing \textit{Rapanos}, 547 U.S. at 743), with \textit{Maui}, 140 S. Ct. at 1482 (Thomas, J, dissenting), who concluded that the Court should not be bound by the dictum in the \textit{Rapanos} plurality opinion or by the lower court opinions it cited; \textit{see also} Transcript of Oral Argument at 15, \textit{Maui}, 140 S. Ct. 1462 (No. 18-260) (containing transcript of oral arguments before the Supreme Court wherein David Henkin, attorney for the respondent environmental groups, also argued that the absence of a statutory requirement that the discharge be direct allows for the interpretation that it can flow through an intermediary conduit).

\textsuperscript{52}. \textit{Id.}
As far back as 1980, the Fifth Circuit concluded in *Sierra Club v. Abston Construction Company*\(^{53}\) that a defendant is not relieved from liability just because they did not construct an actual conveyance to the navigable water, “so long as they are reasonably likely to be the means by which the pollutants are ultimately deposited into a navigable body of water.”\(^{54}\) In 1994, the Second Circuit concluded in *Concerned Area Residents for Environment v. Southview Farm*,\(^{55}\) that “[t]he collection of liquid manure into tankers and their discharge on fields from which the manure directly flows into navigable waters are point source discharges under the case law.”\(^{56}\)

In their dissents, Justices Thomas and Alito criticized the majority opinion in *Maui* as exceeding the strict construction of the CWA language and creating a new nebulous standard: the “functional equivalent of a direct discharge.”\(^{57}\) For Justice Thomas, only a direct discharge from a point source to a navigable water would require a permit.\(^{58}\) Any channeling through groundwater would cut off the necessity of obtaining a CWA permit for the discharge.\(^{59}\) Justice Thomas fails to recognize that a point source already existed with the well, and nothing in the CWA requires two point sources or that the point source itself be so long that it extends directly into the navigable water.

The dissenting Justices also pointed out that there is nothing in the literal text of the CWA from which the “functional equivalent” standard can be derived.\(^{60}\) Justice Alito emphasized that this standard is “too nebulous,”\(^{61}\) creating great uncertainty in costs for businesses and homeowners\(^{62}\) and little guidance for lower courts that will “invite arbitrary and inconsistent application.”\(^{63}\) According to Justice Alito, the “functional equivalent”

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54. *Id.* at 45.
55. *Concerned Area Residents for Environment v. Southview Farm* (“Concerned Area Residents”), 34 F.3d 114, 119 (2d Cir. 1994).
56. *Id.*
60. *Id.* at 1483 (Alito, J dissenting).
61. *Id.* at 1486 (Alito, J., dissenting) (asking “How similar is sufficiently similar?” *Id.*).
62. *Maui*, 140 S. Ct. at 1489, 1491 (citing the high cost of CWA fines and the possibility that homeowners with septic tank systems might have to get permits); Transcript of Oral Argument at 40-41, Cty. of Maui v. Hawaii Wildlife Fund, 140 S. Ct. 1462 (No. 18-260), https://www.supremecourt.gov/oral_arguments/audio/2019/18-260 (avoiding the permitting for septic tank systems was a major concern for Justices Alito, Gorsuch and Roberts).
standard can lead to the absurd result that a pollutant that leaves a point source and travels toward navigable waters via a nonpoint source “is ‘from’ the point source for some portion of the journey, but once it has travelled a certain [undefined] distance or once a certain amount of time has elapsed, it is no longer ‘from’ a point source and is instead ‘from’ a non-point source.”64 This is why the authors of this article believe that a prospective “hydrological connection standard”65 would be a better test for jurisdiction than the hindsight “traceability” test or the “functional equivalent” test adopted by the Supreme Court.

The Environmental Protection Agency (“EPA”)—under different administrations—has contributed to the confusion. For many years the EPA applied the permitting requirements to pollution discharges from point sources that reached navigable water via groundwater, where there was a “direct hydrological connection” to surface water.66 On the same day as the Maui opinion, the Trump administration issued a proposed interpretive statement, in which the EPA concluded that “the CWA is best read as excluding all releases of pollutants from a point source to groundwater from NPDES program coverage, regardless of a hydrological connection between the groundwater and jurisdictional surface water.”67 Because of the shift in position of the EPA from its long-standing policies,68 the justices in Maui

64. Id. at 1485.

65. Id. At various times, the courts and the EPA have used the terms “hydrologic” and “hydrological” interchangeably. In an effort to find consistency, the authors have opted to use the term “hydrological” unless referencing an actual quote.


68. Groundwater Proposed Rule, supra note 66 at 16,812. The Groundwater Proposed Rule is consistent with the EPA’s change of position in 2019. Id.
did not give *Chevron* deference to the current EPA interpretation, which differed from its former position. While EPA’s new interpretation of the CWA would jurisdictionally preclude CWA claims for discharges that were conveyed through groundwater to navigable waters, the administrative interpretation of the scope of the CWA must necessarily yield to the decision of the Supreme Court in *Maui*.

In *Upstate Forever v. Kinder Morgan Energy Partners, L.P.*, the Fourth Circuit adopted the EPA’s long-standing position that the CWA applies to discharges “from a point source via groundwater that has a direct hydrologic connection to surface water.” The court concluded that the “discharge need not be channeled by a point source until it reaches navigable water.” The factual inquiry of “direct hydrological connection” examines the time, distance geology, flow, and slope involved. In *Kinder Morgan*, gasoline from an underground pipeline point source spill migrated through groundwater and soil to navigable water over two years after implementation of remediation and recovery measures to stop the discharge. The court concluded that the “CWA’s language does not require that the point source continue to release a pollutant for the violation to be ongoing.” The Fourth Circuit allowed the CWA citizen suit standing and vacated the district court’s decision, because the point source was less than 1,000 feet from the

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70. *Maui*, 140 S. Ct. at 1474.


72. *Id.* at 651.

73. *Id.*; NAT’L ASS’N CLEAN WATER AGENCIES, CLEAN WATER ACT POINT SOURCE LIABILITY FOR DISCHARGES VIA GROUNDWATER (2018), https://www.nacwa.org/docs/default-source/resources-public/clean-water-act-point-source-liability-for-discharges-via-groundwater-(11-13-18)83a94567b586551879800000c1666.pdf?sfvrsn=2; See also Justin Rheingold, Comment, Digging Deep: The Clean Water Act’s Applicability to Groundwater Discharges, 60 B.C. L. REV. 311, 311 (2019) (analyzing the existing circuit split and arguing that adherence to the CWA’s broad purpose is an effective tool in holding polluters more accountable liable).

74. *Kinder Morgan*, 887 F.3d at 651.

75. *Id.* at 644; but see *Hamker v. Diamond Shamrock Chemical Co.*, 756 F.2d 392, 394, 397 (5th Cir. 1985) (concluding that the residual effects from a prior pipeline discharge of oil were insufficient for a CWA claim when they seeped through groundwater, where plaintiffs sought an injunctive order for monitoring of a pipeline, but failed to allege that Diamond Shamrock is "in violation" of an effluent standard, limitation or order and where one discharge occurred, but no continuing addition to the groundwater from a point source is alleged.).

76. *Kinder Morgan*, 887 F.3d at 648.
navigable water and the plaintiffs were able to allege a direct hydrological connection between the groundwater and the navigable water.

In the *Maui* case, the Obama EPA actually augmented the record by submitting an amicus brief to the Ninth Circuit in which the United States forcefully argued that “discharges from a point source to jurisdictional surface waters that move through groundwater with a direct hydrological connection” are regulated by the CWA. Moreover, the EPA reinforced its support for the “hydrological connection” standard by reference to documents dating back to 1991. The Supreme Court in *Maui* summarily ignored the Trump administration’s EPA’s filing of a new final rule on April 21, 2020 (just six days prior to the decision issued by the Supreme Court) in which the EPA drastically re-defined its position on the scope of Waters of the United States. While the majority opinion in *Maui* did not directly address how the Fourth Circuit analysis squares with its new “functional equivalent of a direct discharge” standard, the Supreme Court clearly focused on the origin of the pollution to determine whether there was a point source discharge rather than on the means of conveyance.

Among the emerging questions is how the *Maui* decision will apply to pending consent decrees. This question is likely to be addressed directly in the *United States v. U.S. Steel Corporation*. At the trial level in the U.S. District Court for Northern Indiana, a CWA violation by U.S. Steel involved a 2017 discharge (spill) into groundwater of at least 298 pounds of hexavalent chromium and 346 pounds of chromium into Burns Waterway a few feet from Lake Michigan. Due to the chromium contamination, beaches were temporarily closed and public drinking water supplies were

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77. See id. at 643 (noting that the pipeline broke 400 feet from Cupboard Creek and less than 1000 feet from Browns Creek, tributaries of the Savannah River).
78. Id. at 652–53; but see Sierra Club v. Va. Elec. & Power Co., 903 F.3d 403, 410 (4th Cir. 2018) (concluding that coal ash ponds were not sufficiently discernible conveyances to be point sources within the meaning of the CWA, while purporting to adopt the hydrologically connected standard of the *Kinder* case).
80. Id. citing to Amendments to the Water Quality Standard Regulations that Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876, 64.982 (Dec. 12, 1991) (quoting, “[T]he affected ground waters are not considered ‘waters of the United States’ but discharges to them are regulated because such discharges are effective discharges to the directly connected surface waters.”).
82. See *Maui*, 140 S. Ct. at 1473–74 (rejecting the means of delivery test).
84. Id. at 18.
impacted.\textsuperscript{85} The pending consent decree did not consider the CWA violation,\textsuperscript{86} relying on the Seventh Circuit Court of Appeals decision in \textit{Village of Oconomowoc Lake v. Dayton Hudson Corporation},\textsuperscript{87} which concluded that water seeped from a retention pond into groundwater was not subject to CWA jurisdiction.\textsuperscript{88} “Even though groundwater eventually reaches streams, lakes, and oceans, the court held, it is not part of the "waters of the United States".”\textsuperscript{89} In light of the \textit{Maui} decision, an environmental group is asking the District Court to reject the pending proposed consent decree and to reevaluate the corrective action to be taken, after taking into consideration that the contamination traveled through the groundwater and an outfall pipe to reach Lake Michigan.\textsuperscript{90}

II. FEDERALISM & GROUNDWATER

\textit{A. Waters of the United States}

For purposes of the CWA, the term “navigable waters” means the “waters of the United States.”\textsuperscript{91} Congress, however, has not defined the term “waters of the United States” in the CWA and has, instead, left it to the courts and administrative agencies to provide that definition.\textsuperscript{92} As early as 1986, the US Army Corps of Engineers articulated the traditional definition of “navigable waters of the United States” as “[t]hose waters that are subject to the ebb and flow of the tide and/or are presently used or have been used in the past or may be susceptible for use to transport interstate or foreign commerce.”\textsuperscript{93}

\begin{footnotesize}
\begin{enumerate}
\item \textsuperscript{86} \textit{U.S. Steel Corp.}, No. 2:18-cv-00127 (N.D. Ind.) (Revised Consent Decree filed Nov. 20, 2019).
\item \textsuperscript{87} \textit{Village of Oconomowoc Lake v. Dayton Hudson Corp.}, 24 F.3d 962 (7th Cir. 1994); see Plaintiff-Intervenor Surfrider Foundation’s Reply to Defendant U.S. Steel’s Response to Plaintiff-Intervenor’s Notice of Suppl. Auth. at ¶ 3, \textit{United States v. U.S. Steel Corp.} (N.D. Ind.) (No. 2:18-cv-00127?) (stating that the Plaintiff Governments failed to consider the groundwater pathway as part of their CWA investigation).
\item \textsuperscript{88} See \textit{Village of Oconomowoc Lake}, 24 F.3d at 966 (showing the holding of the case).
\item \textsuperscript{89} \textit{Id.} at 963.
\item \textsuperscript{91} 33 U.S.C. § 1362(7).
\item \textsuperscript{93} 33 C.F.R. § 329.4 (2020).
\end{enumerate}
\end{footnotesize}
Clarifying the 1985 ruling in *United States v. Riverside Bayview Homes, Inc.*, the 2001 Supreme Court plurality decision in *Solid Waste Agency of Northern Cook County* recognized that jurisdiction extends to those wetlands that have a “significant nexus” to waters that are or were navigable, but concluded that the Corps cannot regulate isolated waters that are not adjacent to traditional navigable waters. Consequently, abandoned sand and gravel pits that had evolved into seasonal ponds as habitat for migratory birds were beyond CWA’s jurisdiction. In the 2006 *Rapanos* Supreme Court case, Justice Scalia narrowed the definition to encompass “relatively permanent” bodies of water that are connected to traditional navigable waters and wetlands with continuous surface connection to such relatively permanent bodies of water. Justice Kennedy’s concurring opinion, however, added the “significant nexus test,” that included bodies of water (and wetlands) as waters of the United States if they “either alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as ‘navigable.’” Although the majority of Justices apparently could agree that the definition should include some waters that are not navigable in the traditional sense, they could not reach consensus on a single rule.

These competing articulations of the definition by the Court were problematic and left the impacted administrative agencies to announce their own definitions. In 2015, the U.S. Army Corp of Engineers (together with the EPA) published the “Clean Water Rule: Definition of ‘Waters of the United States’” (WOTUS Rule).

The agencies sought to synthesize the text of the CWA, the various plurality decisions by the Supreme Court, as well as peer-reviewed science, public input, and the agencies’ experience implementing the statute. After public comment, the 2015 WOTUS Rule included: the traditional navigable waters, interstate waters, the territorial seas, impoundments of jurisdictional

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94. See *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 139 (1985) (ruling that the Corps reasonably acted in interpreting the CWA to require permits for the discharge of fill material into wetlands adjacent to jurisdictional waters).
96. *Id.* at 168.
98. *Id.* at 759, 780 (Kennedy, J., concurring).
101. *Id.*
waters, covered tributaries, and covered adjacent waters. The rule excluded certain bodies of water, like ditches, irrigated land, and stock tanks. The 2015 rule also left the door open, however, to other bodies of water that may be deemed waters of the United States on a case by case basis such as isolated waters that are not connected to navigable waters, but are ecologically important (including California vernal pools or prairie potholes).

Although the 2015 WOTUS rule was often criticized for its breadth, it did not include groundwater within its scope. Some scholars thus criticized the 2015 rule as being too narrow, stating that “[t]here is no historical, textual, or functional basis for asserting jurisdiction over surface waters that are tributary to navigable waters while denying jurisdiction over groundwater that is tributary to those same surface waters.” Applying the *Rapanos* “significant nexus” test, it makes no sense to exclude groundwater from CWA jurisdiction.

In his 2017 executive order, President Trump directed the agencies to replace the Obama administration’s broader WOTUS Rule with one that was consistent with Justice Scalia’s plurality opinion in the *Rapanos* case. Two days before the Court handed down the *Maui* decision, the EPA published its final rule, called the Navigable Waters Protection Rule (NWPR), to replace the Obama WOTUS Rule, dealing with the scope of national jurisdiction under the CWA and its narrowed interpretation of “navigable waters.” The new NWPR standard recognizes only permanent, standing, and flowing waters and wetlands that abut or are otherwise inseparably bound up with such relatively permanent waters as within CWA federal jurisdiction. The NWPR also specifically rejects Justice Kennedy’s “sufficient nexus” case-by-case standard from his *Rapanos* concurrence in favor of a narrower “bright-line rule” of what falls within the

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102. See generally id. at 37,065 (explaining the scope of the significant nexus analysis, and covering traditional navigable waters, interstate waters, and the territorial seas, and referencing the categories of waters determined to have a significant nexus, including covered tributaries, covered adjacent waters, and impoundments).
103. Id. at 37,098.
105. WOTUS, 80 Fed. Reg. 37,055.
107. Id. at 337.
110. Id. at 22,259.
111. Id. at 22,273.
defining the scope of CWA jurisdiction.

Language in Scalia’s *Rapanos* decision recognizes the “hydrological connection” standard, as do twenty other groundwater cases and the EPA’s own interpretation prior to the Trump administration’s directive. Nevertheless, the EPA’s most recent iteration rejects that “hydrological connection” standard as it applies to groundwater conduits. The Biden Administration needs to restore the “hydrological connection” standard, consistent with its long history and its protection of the nation’s waters, which was the primary congressionally-stated purpose of the CWA. “Congress recognized, demanded broad federal authority to control pollution, for ‘[w]ater moves in hydrologic cycles and it is essential that discharge of pollutants be controlled at the source.’” Moreover, reliance on the “hydrological connection” does not require that the EPA intrude on the traditional authority of the States to regulate groundwater, but rather to proscribe and address those discharges that actually impact jurisdictional waters.

The authors of this article believe that the repeal of the 2015 WOTUS Rule results in a substantially narrowed reach for CWA jurisdiction. As a result, CWA protection is removed from a significant number of water sources. In other words, the strides made to improve water quality across the United States since the passage of the CWA may be at risk. Governmental enforcement could revert back to a pre-CWA world where only total maximum daily loads (TMDLs) are applied, and dilution may be deemed an acceptable means of satisfying state regulatory requirements. Therefore, highly concentrated discharges of pollutants may not be regulated until the subsequent level of dilution is determined and pollution is so pervasive that extensive remediation will be required after the fact, when it is most difficult and most expensive to achieve.

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114. See *Kvien*, supra note 41, 977–78 (summarizing the above-mentioned twenty groundwater cases).
116. *Id.* at 16,824.
118. See CWA, 33 U.S.C. § 1313(d)(1)(A) (addressing impaired waters and TMDLs); see also Statute and Regulations Addressing Impaired Waters and TMDLS, EPA, https://www.epa.gov/tmdl/statute-and-regulations-addressing-impaired-waters-and-tmdls#:~:text=The%20objective%20of%20the%20Act%27s%20efforts%20to%20attain%20the%20object (last visited Dec. 8, 2020) (addressing impaired waters and TMDLs in Section 303(d) of the Clean Water Act).
B. Regulating Groundwater

Groundwater provides one-third of the public water supply in cities and 90% of drinking water in rural areas, as well as contributing 48% of water used for irrigation.119 In addition, 29% of all fresh water came from groundwater.120 Most state water laws focus on ownership, time and water allocation rules, but the complexity of the state rules make it difficult to have a universal policy regarding pollution that flows through groundwater.121 Allocation systems for water use also complicate matters, with eastern states adopting riparian rights that allow a landowner to make reasonable use of the water resource, while western states generally have a prior appropriation system or a hybrid.122

A 2012 study by the Water Resources Research Center and the Udall Center for Studies in Public Policy at the University of Arizona revealed that groundwater is used for up to 95% of human water needs, depending on the state and region of the state.123 It reports that “there is significant variance in terms of the role of state law in recognizing the connection between surface and groundwater, and consideration of the water needs of groundwater dependent ecosystems.”124 While 96% of the states regulate groundwater, 71% of states have separate agencies that manage water quantity versus water quality, further complicating coordinated management.125 Public water supply sources and aquifers are more tightly regulated than private wells; only nineteen states regulated household or domestic wells.126 Groundwater governance priorities emphasize water quality/contamination (90%); conflicts between water users (e.g., well interference) (72%); and declining groundwater levels (64%).127 To manage groundwater quality, 76% rely on permits, 76% on monitoring, 57% on planning, and 50% on protected areas.128 Some states have extensive regulatory guidance, such as

120. Id.
121. See Blumm, supra note 106, at 340–342 (discussing the focus of state groundwater regulations and their lack of uniformity).
124. Id.
125. Id. at 7.
126. Id. at 8–9.
127. Id. at 10.
128. Id. at 13.
California’s Sustainable Groundwater Management Act (SGMA), where groundwater supplies two-thirds of the state’s fresh water. California’s SGMA provides for the creation of groundwater sustainability agencies (GSA) for each groundwater basin, as well as the assessment and ranking of these basins to determine the risks to basin integrity. California has even begun to utilize Airborne Electromagnetic Surveys to determine the distribution and characterization of aquifers, aquitards, and relevant geologic formations necessary to inventory and plan for the long-term sustainable management of California’s groundwater resources. Each GSA is tasked with developing and adopting a groundwater sustainability plan for each basin that is deemed to be a medium-to-high priority. Ultimately, the California legislature enacted the SGMA to accomplish key goals while not impairing the highly complex water rights that exist in California. These goals include: (1) managing local groundwater basins sustainably with minimal state intervention; (2) increasing groundwater storage and eliminating the over drafting of aquifers and thereby minimizing subsidence; (3) promoting design and development that promotes recharge of the aquifers; (4) improving data collection for enhanced management of subsurface resources; and (5) assuring the GSAs are empowered to act with the appropriate authority, technical guidance, and financial support to effectively manage the groundwater resources within their respective basins. The protection and sustainable management of groundwater is an essential component both in terms of water quantity and quality.

A 2019 Environmental Law Institute webinar reported that twenty-nine states regulate discharges into groundwater within WOTUS in an effort to

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130. See CAL. WATER CODE §§ 10723–24, 10722.4, 10933(b) (establishing and categorizing basins, and setting standards for the groundwater monitoring program).


132. CAL. WATER CODE § 10720.7(a) (2016).

133. Id. § 10720.1.

134. See Maven, supra note 131.
protect groundwater quality.\textsuperscript{135} Six states issued NPDES permits for groundwater discharges.\textsuperscript{136} Eleven states used the Resource Conservation and Recovery Act (RCRA) and twenty-seven used the federal Safe Drinking Water Act (SDWA) and Underground Injection Control (UIC) programs as the primary vehicles to regulate groundwater contamination.\textsuperscript{137} The Resource Conservation and Recovery Act (RCRA) is the primary federal statute governing the disposal of solid and hazardous waste.\textsuperscript{138} The EPA is delegated primary RCRA authority to regulate and set the minimum standards for the treatment, storage and disposal of listed hazardous waste,\textsuperscript{139} as well as the basic standards for the management of non-hazardous municipal and industrial waste.\textsuperscript{140} While retaining its enforcement and oversight authority, EPA has delegated responsibility to each state’s hazardous waste regulatory agency to implement state RCRA programs in lieu of the EPA.\textsuperscript{141} Under Subtitle D of the RCRA regulations, states assume the primary role in implementing non-hazardous waste programs which provide the criteria for design, location, operation, clean up, and closure of municipal and industrial landfills.\textsuperscript{142} Under Subtitle C of the RCRA regulations, states assume responsibility for key components of the comprehensive and safe management of hazardous waste from “cradle to grave.”\textsuperscript{143} Subtitle C of RCRA not only provides specific lists and criteria to define “hazardous waste,” but also sets standards applicable to: (a) generators and transporters of hazardous waste; and (b) owners and operators of hazardous waste treatment, storage and disposal facilities.\textsuperscript{144} Subtitle C also establishes permit, inventory and reporting requirements relating to the treatment, storage, and disposal of hazardous waste.\textsuperscript{145}


\textsuperscript{136}Id.

\textsuperscript{137}Id.


\textsuperscript{141}See, e.g., 42 U.S.C. § 6946 (2012) (detailing the procedures States shall follow to develop and implement a plant for regional solid waste management).

\textsuperscript{142}See RCRA Subtitle D, 40 C.F.R. §§ 239-259 (2020) (explaining the RCRA program); see also 40 C.F.R. §§ 280.10–280.52 (regulating states implementation of non-hazardous waste programs).

\textsuperscript{143}See RCRA §§ 3003-3004 (governing the transportation, storage, and disposal of hazardous waste).

\textsuperscript{144}RCRA, 42 U.S.C. §§ 6921-6924 (1976).

\textsuperscript{145}RCRA, 42 U.S.C. §§ 6925-6939g.
Congress established a basic national standard by directing the EPA to develop minimum national technical standards and mandated state RCRA programs to be at least as stringent as these federal standards.\textsuperscript{146} To assure compliance, Congress authorized broad enforcement authority that includes the power to issue compliance orders, civil and criminal penalties, and to issue interim corrective action orders to protect human health or the environment.\textsuperscript{147} Recognizing the potential limitations and resources available for government enforcement, Congress also granted citizen suit authority if the EPA chooses not to pursue enforcement directly.\textsuperscript{148} In enacting RCRA as amended, Congress intended to build a comprehensive and cooperative federal/state program to promote the protection of human health and the environment.\textsuperscript{149}

Perhaps most relevant to the interpretation of RCRA as it relates to complimentary environmental statutes, Congress was explicit in its intent to require “that hazardous waste be properly managed in the first instance thereby reducing the need for corrective action at a future date.”\textsuperscript{150} Although RCRA empowers government regulators to require monitoring of groundwater at treatment, storage, and disposal facilities to prevent hazardous waste from compromising soil and groundwater quality,\textsuperscript{151} the goal is to minimize the need for expensive and difficult corrective actions in favor of proactive and protective management.\textsuperscript{152} Nonetheless, as discussed infra in part III with coal ash ponds, short-sighted or expedient waste management practices routinely result in contamination of the soil and groundwater that RCRA is intended to protect. In recognition of this reality, the EPA’s Corrective Action Program provides guidance for industries to prevent and clean up exposure routes to groundwater.\textsuperscript{153}

\begin{itemize}
\item\textsuperscript{147} See, e.g., RCRA, 42 U.S.C. § 6928 (federal enforcement authority regarding hazardous waste management).
\item\textsuperscript{148} RCRA, 42 U.S.C. § 6972 (permitting citizen suit authority and procedures).
\item\textsuperscript{149} See Id. § 6902 (explaining objectives and national policy).
\item\textsuperscript{150} Id. at § 6902(a)(5).
\item\textsuperscript{151} Id. § 6901-6992(k) (providing statutory guidance to prevent soil or groundwater pollution); see also 40 C.F.R. § 264.1 (2020) (establishing regulations to promote minimum national standards for the management of hazardous waste); see 40 C.F.R. §§ 261.31-261.33 (listing regulated hazardous wastes).
\item\textsuperscript{152} Id. § 6901(b) See RCRA, 42 U.S.C. § 6902(b) (National Policy).
\end{itemize}
In addition to the protections afforded by RCRA, the federal Safe Drinking Water Act (SDWA)\(^{154}\) provides some protection for the quality of groundwater, but only if that groundwater is used as drinking water.\(^{155}\) When groundwater is used as municipal drinking water, the state regulates it through authority delegated from the SDWA.\(^{156}\) Where aquifers are the primary source for drinking water, the SDWA requires states to develop plans to prevent contamination of the public water system.\(^{157}\) SDWA also regulates wellhead injection through the Underground Injection Control Program (UIC),\(^{158}\) but exempts most hydraulic fracking fluids.\(^{159}\)

The UIC is a program promulgated under the SDWA (and RCRA) which imposes, technical standards for various classes (six of them) of injection wells.\(^{160}\) These classes include, for example, Class I (industrial and municipal waste disposal wells) and class II (oil and gas related injection wells).\(^{161}\) The goal is to protect public health by preventing injection wells from contaminating underground sources of drinking water.\(^{162}\) It is limited to aquifers that are used by the public.\(^{163}\) It also imposes certain restrictions as requirements on Class I hazardous waste injection wells.\(^{164}\)

In addition, as another example of cooperative federalism, the UIC includes provisions that permit federal authority to be delegated to the states.\(^{165}\) In California, for example, the delegation was done and (following audit) the EPA found that it was severely deficient.\(^{166}\) The EPA imposed oversight and has been enforcing a corrective action plan to get the state back on track.\(^{167}\) Finally, under the UIC, there are procedures to exempt whole

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\(^{154}\) 42 U.S.C. § 300h-6(f).


\(^{156}\) Thomson Reuters, 50 State Regulatory Surveys: Envtl. Laws: Pollution - Permits for Groundwater and Surface Water Discharge, Apr. 2020, West, 0070 REGSURVEYS 13 [hereinafter Groundwater Survey].

\(^{157}\) Safe Drinking Water Act (SDWA), 42 U.S.C. § 300h-6(a).

\(^{158}\) See 40 C.F.R. § 146 (2015) (establishing underground injection control program criteria and standards); 42 U.S.C. § 300g-9; see also 42 U.S.C. §§ 300h-1(b), 300h-3 (containing underground injection control program provisions requiring well operation permits).

\(^{159}\) See id. § 300g-9.


\(^{161}\) 42 U.S.C. § 300h-1(a).

\(^{162}\) 42 U.S.C. §§ 300h(b).

\(^{163}\) 42 U.S.C. §§ 300h-3(c), 300h-6(a).

\(^{164}\) 42 U.S.C. § 300h-5.

\(^{165}\) Id.


\(^{167}\) See id. (discussing the EPA’s oversight of state’s oil and gas programs).
aquifers. Note that the term “underground source of drinking water” (USDW) means an aquifer or its portion: “(a)(1) Which supplies any public water system; or (2) Which contains a sufficient quantity of ground water to supply a public water system; and (i) Currently supplies drinking water for human consumption; or (ii) Contains fewer than 10,000 mg/l total dissolved solids; and (b) Which is not an exempted aquifer.” As a result, there is heavy pressure from industry to have various aquifers exempted and therefore left without SDWA/UIC protection. In California, there are currently 30 aquifers for which UIC exemption applications are pending. The potential for short-sighted protection with long-term impacts is enormous. Implications for subsurface contamination of aquifers would potentially be irreversible during our lifetimes.

Since many states have regulatory programs to address at least some aspects of groundwater, the Maui majority couched its “functional equivalent” standard in the context of not unduly infringing on states’ rights. “Decisions should not create serious risks either of undermining state regulation of groundwater or of creating loopholes that undermine the [CWA] statute’s basic federal regulatory objectives.” The dissenting justices in Maui raise federalism issues, arguing that the “functional equivalent” test impinges on the states’ traditional authority to regulate groundwater and nonpoint sources. They noted that nothing in the text of the CWA grants federal jurisdiction over isolated groundwater, but rather Congress intended the States to have the “primary responsibilities and rights … to prevent, reduce, and eliminate pollution.”

When Congress rejected the Aspin Amendment to the CWA, it decided not to include groundwater as per se jurisdictional, but it also did not enact clarifying language that would exclude its regulation per se where groundwater is hydrologically connected to waters of the U.S. When

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168. See SDWA, 42 U.S.C. § 300g-4 (allowing injections of unregulated pollutants that would so degrade exempted aquifers as to make them unusable for future use).
169. 40 C.F.R. § 146.3.
171. Colorado River Compact, 1922, U.S. BUREAU RECLAMATION, https://www.usbr.gov/lc/region/g1000/pdfs/crcompct.pdf (creating the Colorado River compact which divvied up water without anticipating the population growth in southern Colorado and northern Arizona; resulting in grossly inadequate water resources allocated to the upper Colorado Compact states).
173. Maui, 140 S. Ct. at 1477.
174. Id. at 1490.
175. Kvien, supra note 41, at 958.
176. Maui, 140 S. Ct. at 1480 (Thomas, J., dissenting, citing 33 U.S.C. § 1251(b)).
177. See Kvien, supra note 41, at 979–80; See also 118 Cong. Rec. H10,669 (daily ed. Mar. 28, 1972) (rejecting the Aspin Amendment).
SDWA was enacted, there was some legislative history indicating that groundwater and deep well injection could be regulated under the CWA, but only if it discharges into navigable water. 178 Where a state has approval to administer and issue NPDES permits, it can regulate those permits to address discharges into wells that impact groundwater. 179

C. Cooperative Federalism under CWA

Federal laws such as the CWA and RCRA are crafted to achieve “cooperative federalism” to balance the needs of both federal and state stakeholders in protecting groundwater and surface water from pollutants. 180 Prior to the enactment of the CWA, states were primarily responsible for water quality regulation and there was virtually no federal enforcement. The results were predictably poor. On October 2, 1965, President Lyndon Johnson made the following remarks at the signing of the Water Quality Act of 1965:

Today, we proclaim our refusal to be strangled by the wastes of civilization. Today, we begin to be masters of our environment. But we must act, and act swiftly. The hour is late, the damage is large. The clear, fresh waters that were our national heritage have become dumping grounds for garbage and filth. They poison our fish; they breed disease; they despoil our landscapes. No one has a right to use America's rivers and America's waterways that belong to all the people as a sewer. The banks of a river may belong to one man or even one industry or one State, but the waters which flow between those banks should belong to all the people. There is no excuse for a river flowing red with blood from slaughterhouses. There is no excuse for papermills pouring tons of sulphuric acid into the lakes and the streams of the people of this country. There is no excuse--and we should call a spade a spade--for chemical companies and oil refineries using our major rivers as pipelines for toxic wastes. There is no excuse for communities to use other people's rivers as a dump for their raw sewage. 181

179. See CWA, 33 U.S.C. § 1342(b)(1)(D) (authorizing State permit programs to issue permits which control the disposal of pollutants into wells).
The CWA was passed seven years later and marked the start of an effective partnership between state and federal governments to clean up the nation’s water resources. The foundation for this partnership relies on the establishment of national standards as a floor which permits states to impose more stringent requirements as the states may deem appropriate. The CWA continued the use of water quality standards for the receiving waters but added a federally mandated permitting and treatment process to address point source pollution using the best practicable control technology or best conventional pollutant control technology available before these discharges contaminate the receiving waters.\(^{182}\)

To make this form of cooperative federalism work, the EPA and the Army Corps of Engineers (Corps) share delegated authority under the CWA, with the EPA establishing the standards and the Corps serving as the primary federal permitting authority.\(^{183}\) Cooperative efforts of federal, state and local governments, and regional organizations are needed to accomplish water quality goals.

For waters that do not meet quality standards, states use two additional anti-pollution methods to ensure impaired water bodies ultimately meet standards. First, states will set Total Maximum Daily Loads (TMDLs), which are the maximum allowable amounts of a pollutant in impaired bodies of water. TMDLs are set with the goal of reducing pollution so a body of water can meet quality standards. Second, states will divide the maximum allowable amount of a pollutant discharge into an impaired water among various pollution sources.\(^{184}\)

The states with delegated authority from the EPA implement regulations that satisfy minimum federal requirements and adopt permitting procedures.\(^{185}\)

Pursuant to § 303(d) of the CWA, states are to establish a list of impaired waters based on the severity of the pollution and the designated use of the

\(^{182}\) See 40 C.F.R. § 125.3 (1990) (outlining discharger’s technology-based treatment requirements in permits).


\(^{184}\) Id.; see also New Vision for Implementing the CWA Section 303(d) Impaired Waters Program Responsibilities, State Partnerships, U.S. ENV’T’L PROT. AGENCY, https://www.epa.gov/tmdl/new-vision-implementing-cwa-section-303d-impaired-waters-program-responsibilities (last updated Sept. 7, 2018) (announcing a collaborative framework for implementing CWA Section 303(d) impaired waters program with states).

\(^{185}\) Id.
waterbody. States assess the water quality of rivers, lakes, streams and creeks within their boundaries. States establish TMDL requirements for each type of pollutant in each type of water body. First, the state must identify the beneficial uses of each water body; second, establish criteria for those uses; and third, establish an anti-degradation policy. For example, when the water body needs to be clean enough that it is fishable and swimmable, the TMDL limits must be set lower than if the primary use is industrial use. In assessing how clean is clean, beneficial use categories include: I. Protection of Aquatic Life, II. Human Health & Fish Consumption, III. Public Drinking Water, IV. Irrigation, V. Livestock watering, VI. “Fishable/Swimmable” whole body contact, VII. Groundwater, and VIII. Industrial Use. The states develop watershed plans and implementation plans to restore the impaired water bodies, commensurate with § 303(d) of the CWA TMDL list. The states also establish standards for publicly owned waste (sewage) treatment facilities (POWT). The purpose of adopting water quality standards is to determine which waters are healthy, which need to be restored, and how much restriction is needed per pollutant. Pollutants include conventional pollutants, nonconventional pollutants, toxic pollutants, and biological contaminants (including sewage). The maximum amount of a pollutant allowed to enter a waterbody is calculated to determine the pollutant loading capacity that each water body can assimilate without exceeding state water quality.

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188. See id. § 20-7.031, at 11 (referencing the CWA requirement for the States to develop priorities in implementing plans to restore water quality).


191. See 40 C.F.R. § 122.44(d)(1)(i) (2020) (recognizing non-conventional pollutants are subject to State requirements and limitations).


193. See 40 C.F.R. §§ 401.15, 122.23(a), 122.44 (b)(2) (2020) (establishing that State NPDES permitting applies to concentrated animal feeding operations and to standards for sewage sludge use or disposal).
quality standards. The loading capacity is the TMDL, which takes into account federal guidelines. After TMDL implementation plans are developed, water quality-based discharge limits in NPDES permits are authorized under section 402 of the CWA, with quantity and duration limits. The government agency (Department of Natural Resources in Missouri, for example) allocates the load to point sources in the permitting process. In setting the limits for point sources, the agency needs to take into account that the estimated load of pollutants or nutrients from nonpoint sources (that may impact the TMDL but may not require obtaining permits).

Under the CWA, the EPA can delegate CWA authority to “each State desiring to administer its own permit program for discharges into navigable waters within its jurisdiction.” Once the EPA approves the state permitting program, federal NPDES permitting is suspended. Nonetheless, the CWA does not expressly grant exclusive authority to either the EPA or the administering state agency to determine CWA violations. Under this schema, the EPA issues NPDES water quality permits in Massachusetts, New Hampshire, New Mexico, the District of Columbia, and U.S. territories, but has delegated authority to the other states to issue their own permits. The EPA website provides charts detailing the extent of delegated authority and whether the authority applies to state NPDES permit programs, state pretreatment programs, general permit programs, and regulation of federal facilities and biosolid (sludge) programs. For example, both Missouri and

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197. See CWA, 33 U.S.C. § 1313(d)(1)(D) (LexisNexis 2020) (demonstrating that under federal regulations at 40 C.F.R. § 130.7, a TMDL must comply with the following requirements: (1) be designed to attain and maintain the applicable water quality standards, (2) include a total allowable loading and as appropriate, waste load allocations (WLAs) for point sources and load allocations for nonpoint sources, (3) consider the impacts of background pollutant contributions, (4) take critical stream conditions into account (the conditions when water quality is most likely to be violated), (5) consider seasonal variations, (6) include a margin of safety (which accounts for uncertainties in the relationship between pollutant loads and instream water quality), and (7) be subject to public participation).
198. See 33 U.S.C. § 1342(o) (establishing limits through an anti-backsliding provision and applying that provision to 33 U.S.C. § 1313 (d), the provision identifying state TMDLs).
201. See generally id. § 1342(b) (demonstrating the NPDES-State-Federal relationship in Hawaii Wildlife Fund, 886 F.3d 737, 750).
202. See NPDES Permits Around the Nation, U.S. Envt’l Prot. Agency, https://www.epa.gov/npdes-permits (last updated May 22, 2020) (clicking on each state shows whether the permits are issued by the EPA or the delegated to the individual state).
203. See id. (showing the various programs when clicking on each state).
California have delegated authority to regulate all except their biosolid programs.\(^{204}\)

The states normally have primary jurisdiction over groundwater, while the federal government regulates navigable water.\(^{205}\) States set standards for groundwater, especially to protect drinking water, livestock watering, and irrigation.\(^{206}\) Nevertheless, pollutants disposed in wells that “alter the water quality” of surface waters are “subject to NPDES permitting requirements.”\(^{207}\) The states “cannot create exemptions to the CWA whether or not the EPA has delegated permitting authority to the state.”\(^{208}\) Only Congress can create exemptions to the CWA permitting requirements.\(^{209}\) In so ruling, the 9th Circuit in the Northern Plains Reservation Council case held that:

> Just as the EPA does not have the authority to create an exemption for unaltered groundwater, neither does the State of Montana, as the EPA cannot delegate to a state more authority than the EPA has under the CWA. Moreover, absent statutory authority in the CWA for Montana to create such exemptions, it cannot possibly be urged that Montana state law in itself can contradict or limit the scope of the CWA, for that would run squarely afoul of our Constitution’s Supremacy Clause. U.S. Const. art. VI, cl. 2.\(^{210}\)

Under the Trump Administration’s recently finalized regulatory definition of Waters of the United States, however, groundwater is specifically exempted from the scope of Waters of the United States.\(^{211}\) The


\(^{205}\) See Maui, 140 S. Ct. 1462, 1476 (2020) (implying the relative roles of the state and federal governments).

\(^{206}\) See, e.g., MO. CODE REGS. ANN. tit. 10 § 20-7.031(6)(A) (showing statutory protections for groundwater and uses).

\(^{207}\) Northern Plains Res. Council v. Fid. Expl. & Dev. Co., 325 F.3d 1155, 1161–62 (9th Cir. 2003) (citing CWA, 33 U.S.C. § 1362(6)(B)). Fidelity Exploration & Development Company (“Fidelity”) extracted methane gas for commercial sale from coal seams located deep underground in the Powder River Basin, Montana. Id. The Montana Department of Environmental Quality (MDEQ) advised Fidelity that no permit was required to discharge the coal bed methane groundwater because Montana state law (Water Quality Act, Montana Code § 75-5-401(1)(b)) exempts unaltered groundwater from state water quality requirements. The court held that no such exemptions are permissible under the CWA. Id. at 1157–58. Wells are specifically listed as a type of point source under the CWA, 33 U.S.C. § 1362(14).

\(^{208}\) Northern Plains Res. Council, 325 F.3d at 1157–58.

\(^{209}\) See id. at 1165 (citing the Supremacy Clause preempting Montana’s ability to make exemptions and holding that Montana cannot create an exemption to something subject to federal statutory authority).

\(^{210}\) Id. at 1164–65.

Trump administration has narrowed the definition of WOTUS in an effort to “limit” federal jurisdiction under the CWA under the guise of cooperative federalism. This simultaneously restricted the states’ ability to regulate pollutant discharges by preemptively preventing states from exercising permitting authority on water quality grounds, especially where infrastructure projects are concerned. This EPA takes the position that it lacks CWA authority to regulate point source discharges where such polluted discharges flow into “groundwater” and subsequently migrate to “navigable waters,” in part because groundwater is within the jurisdiction of the state. But this position blunts the tools available for the states to address the problem.

In addition, the Trump administration’s EPA obfuscates the importance of the “hydrological connection” between these water resources and the pollutants that are “fairly traceable” from the point source to the navigable water as a nexus for federal CWA jurisdiction. The goal of CWA cooperative federalism is to prevent pollution of waterways and to clean up water quality throughout the United States. This goal should not be circumvented by narrow jurisdictional construction.

III. IT IS MORE THAN GROUNDWATER

In *Maui*, the Supreme Court addressed the question of “whether the Act [CWA] requires a permit when pollutants originate from a point source but...
are conveyed to navigable waters by a nonpoint source,’” referencing groundwater as the example, but not limiting the scope of its decision to groundwater conveyance.\textsuperscript{219} The Court intended a broader application. As the Maui decision is applied to other intermediary conduits, two additional issues may arise. The first issue is whether the discharge was originally from a discrete point source. The second issue is whether the pollutant ended up going to what is still within the definition of WOTUS under the Trump administration’s narrowed definition.\textsuperscript{220}

In the Maui decision, all parties conceded that the well was a point source and the ocean was navigable water.\textsuperscript{221} When groundwater is the conduit (instead of the point source), it does not have to be “confined and discrete,” as long as there is the “functional equivalent of a direct discharge.”\textsuperscript{222} Therefore, the conduit role also avoids having to classify groundwater as “water of the United States.”

Pre-Maui case law also supports the reasoning that Congress did not intend to create a loophole for polluters when pollutants migrate from a stormwater settling basin through groundwater, because the objective of the CWA “is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.”\textsuperscript{223} “[I]t would hardly make sense for the CWA to encompass a polluter who discharges pollutants via a pipe running from the factory directly to the riverbank, but not a polluter who dumps the same pollutants into a man-made settling basin some distance short of the river and then allows the pollutants to seep into the river via the groundwater.”\textsuperscript{224}

How will the “functional equivalent to a direct discharge” standard be applied to discharges from concentrated animal feeding operations (CAFOs),\textsuperscript{225} industrial wastewater treatment facilities, and potentially leaking or leaching treatment or coal ash ponds? The CWA includes an exemption for agricultural return flows, as well as for “any introduction of

\begin{footnotes}
\item [219] Maui, 140 S. Ct. at 1468 (citing Petition for Writ of Certiorari, Maui, 140 S. Ct. at 1462 (No. 18-260).
\item [222] Maui, 140 S. Ct. at 1477.
\item [223] 33 U.S.C. § 1251(a).
\item [225] See 40 C.F.R. § 122.23(b)(1)-(2), (4), (6) (defining “CAFO” as an animal feeding operation (“AFO”) with a lot or facility that contains a specified number and type of animals, e.g., as many as or more than 700 mature dairy cattle, and confines the animals for a total of forty-five days or more out of a 12-month period).
\end{footnotes}
pollutants from non-point source agricultural activities.**226** This agricultural exemption, however, does not encompass CAFOs, which are deemed to be point source operations that result in point source discharges which are subject to the CWA.**227** Percolation ponds, treatment ponds, and surface application runoffs from municipal or industrial bio-sludge applied to land in sludge drying beds are also potentially implicated by this standard. They may leak, especially if not adequately lined, and may be vulnerable in flooding conditions. **228** “No discharge” mining ponds are intentionally located near streams so they can percolate to the stream;**229** so is that the “functional equivalent” of a direct discharge?

The point source issue has also arisen in recent appellate cases involving coal ash. The Circuit split that led to the Supreme Court’s grant of a writ of certiorari in the Maui case included the Fourth Circuit’s 2018 decision in *Sierra Club v. Virginia Electric & Power Company,* **230** and the Sixth Circuit’s 2018 decisions in *Kentucky Waterways Alliance v. Kentucky Utilities Company* **231** and *Tennessee Clean Water Network v. TVA.* **232** In its 2018 decision of *Sierra Club v. Virginia Electric & Power Company*, the Fourth Circuit declined to find coal ash ponds to be “point sources,” concluding that they were not sufficiently discernible conveyances within the meaning of the CWA.**233** The Dominion coal ash storage facilities in the *Sierra Club* case were unlined.**234** Although coal ash settling ponds and landfills may allow leachate to percolate into groundwater, the court did not

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**226.** See Clean Water Act, 33 U.S.C. § 1342 (l)(1) (setting limitations on permits for agricultural return flows from irrigated agriculture); see also 40 C.F.R. § 122.3(c) (listing agricultural exclusions).

**227.** See e.g. *Concerned Area Residents*, 34 F.3d 114, 115 (2nd Cir. 1994) (holding that the liquid manure spreading operations are a point source within the meaning of CWA section 1362(14) because defendant farm falls within the definition CAFO and is not subject to the agricultural exemption).


**232.** See *Tenn. Clean Water Network v. Tenn. Valley Auth.*, 905 F.3d 436, 441-42, 446 (6th Cir. 2018) (rejecting the “hydrological connection” theory posed in a citizen suit challenging unauthorized discharges of coal ash pollutants through karst sinkholes to groundwater and then to Old Hickory Lake and the Cumberland River).

**233.** *Sierra Club*, 903 F.3d at 410-11 (4th Cir. 2018) (noting that a point source is "any discernible, confined and discrete conveyance."); 33 U.S.C. § 1362(14).

recognize them as point sources. The Fourth Circuit reached this conclusion, despite purportedly adopting its Fourth Circuit’s 2018 Kinder Morgan position that hydrologically connected groundwater is covered by the CWA. Instead, the court concluded that RCRA (not CWA) regulates the treatment and storage of solid waste like coal ash and its effects on surface waters and groundwaters.

Both Sixth Circuit cases also related to pollution of waterways from coal ash. The Kentucky Utilities Company stored coal ash in man-made ponds sitting on top of an aquifer; chemicals from that source reached Herrington Lake surface waters after traveling through groundwater. In the Kentucky Waterways Alliance case, the Sixth Circuit rejected both the “point source” theory and the “hydrological connection” theory, concluding instead that the pollutant must make its way to navigable water directly through a point source conveyance. The Sixth Circuit then decided that groundwater and the karst topographic through which the pollutant flowed did not constitute “discernable, discrete, nor confined” point sources under the CWA.

In concluding that the diffuse nature of groundwater prevents it from being a point source, and thus not subject to CWA jurisdiction, the Sixth Circuit emphasized that Congress intended to “recognize, preserve, and protect the primary responsibilities and rights of the States to prevent, reduce, and eliminate pollution [and] to plan the development and use . . . of land and water resources.” The states regulate non-point source pollution through waste treatment management and disposal of solid wastes (including coal ash) through RCRA management plans. The Sixth Circuit further concluded that CWA and RCRA jurisdiction were mutually exclusive and recognized plaintiffs’ standing to pursue a RCRA claim.

In reaching its conclusion, the Sixth Circuit relied on flawed assumptions that belied its recognition of the important role of cooperative federalism and the essential

235. Id. at 458.
236. Sierra Club, 903 F.3d at 409.
238. See Ky. Waterways All. v. Ky. Util. Co, 905 F.3d at 931 (citing the plaintiff’s concerns about arsenic, lead, calcium, boron, and selenium being among the chemicals found in coal ash).
239. Id. at 932; Tenn. Clean Water Network, 905 F.3d at 441, 446.
240. Ky. Waterways All., 905 F.3d at 933-934.
241. Id. at 934.
242. Id. at 934, 936 (interpreting Justice Scalia’s opinion in Rapanos, 547 U.S. 715, 729-30 (2006) to mean that pollutants can travel through multiple intermediary point sources to reach the ultimate jurisdictional waterway, rather than that pollutants can travel through nonpoint sources en route. In reaching this conclusion, the Sixth Circuit also rejects the reasoning of the Ninth Circuit in Hawaii Wildlife Fund, 886 F.3d 737, 748-49 (9th Cir. 2018)).
243. Ky. Waterways All., 905 F.3d at 929 (quoting 33 U.S.C. § 1251(b)).
244. Ky. Waterways All., 905 F.3d at 929.
245. Id. at 940.
protections afforded when RCRA and the CWA are applied in coordination.246 Instead, the Court focused solely on the viability of the RCRA claim. Under RCRA, coal combustion residuals (CCRs) from electric utilities and their impoundments were regulated under the 2015 CCR Rule247 to minimize the likelihood of groundwater contamination.248

To provide context as to the importance of how this new standard is to be applied, the EPA has identified over 1,000 coal ash slurry ponds, containing 112 million pounds of coal ash, 46% of which were unlined.249 A 2007 EPA study reported in the New York Times estimated that 67 towns in 26 states had groundwater contamination from heavy metals, such as lead, chromium, nickel, and arsenic.250 Runoff and seepage pose significant environmental dangers to waterways, exacerbated by flooding incidents in recent years. In the aftermath of Hurricane Florence in 2018, floodwaters rose, breaching a Duke Energy coal ash pond’s retaining wall.251 The North

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246. See id. at 928-30, 37. Despite recognizing that RCRA is “designed to work in tandem with other federal environmental protection laws, including the CWA” and that RCRA expressly “excludes industrial discharges which are point sources subject to NPDES permits under the CWA”, the court ruled that no discharge that reached navigable waters via groundwater could support a claim under the CWA. Id. at 929, 937. The court focused solely on the damages to soil and groundwater, without considering that the discharges could extend beyond and into navigable waters that are protected by the CWA. As the Supreme Court later ruled in Maui, the fact that a discharge is conveyed through groundwater to navigable waters does not by itself bar application if the CWA. In fact, given the exclusion of industrial discharges from the reach under RCRA, the CWA is precisely the statutory program that should be applied to address damages that extend beyond the soil and groundwater. Id. at 940-947 (Clay, Cir. J. dissenting).


Carolina Department of Environmental Quality ordered Duke Energy to stop capping coal slurry ponds, and instead dry them and send the coal ash to lined landfills. An impoundment wall at the Tennessee Valley Authority’s Kingston coal ash impoundment wall broke in 2008, spilling 300 million to one billion gallons of coal ash slurry, contaminating land and waterways and burying fifteen houses. This 2009 Superfund site served as a catalyst for new coal ash legislation and regulation.

The 2016 Water Infrastructure for Improvements to the Nation Act (WIIN) grants states authority to administer RCRA subtitle D operating permit programs, pursuant to the 2015 Coal Combustion Residuals Rule (CCR) or its successor. CCR regulates the management and disposal of coal ash generated by electric utilities and independent power producers pursuant to subtitle D of RCRA. The rule governs location, design, and operating criteria, as well as record keeping for facility expansions. It also requires lining for both new and existing landfills and surface impoundments, which are required to implement groundwater protection and monitoring. Facilities that are unlined or have groundwater contamination above the regulated protection standard must stop receiving CCR wastes, adopt corrective action, and either retrofit or close. The Trump Administration, however, has continually extended closure dates.

Both industry and environmentalists challenged the CCR rule in cases that were consolidated into the Utility Solid Waste Activities case.

In 2018, the Trump administration adopted modified regulations that allow states greater flexibility and alternative ways to achieve compliance. The 2018 revisions to the CCR Rule also modified the regulation of on-site storage practices and inactive surface impoundments, in addition to


257. CCR Rule, 80 Fed. Reg. at 21,310.

258. Id. at 21,303–21,304.

259. Id at 21,414.


extending closure dates by 18 months for sites that do not meet water protection standards. The Trump administration adopted rules that provide a less safe alternative and prolong closure of sites without liners.

President Trump’s Executive Order for Promoting Energy Independence and Economic Growth prioritizes protection for fossil fuel industries. Consistent with this policy, EPA Secretary Wheeler bragged that this regulatory change would save the coal industry $30 million annually. A question remains as to whether RCRA subpart C and D regulation of permitted landfills and the revised CCR rules are adequate to protect waterways if CWA jurisdiction does not apply.

In the Maui decision, all parties conceded that the injection well was a point source. By contrast, coal ash ponds pose an additional threshold issue of whether or not they qualify as CWA point sources, since the Fourth and Sixth Circuits have concluded that they are not. Assuming arguendo that they are point sources, the migration of chemicals from those locations are now governed by the “functional equivalent of a direct discharge” standard set forth in Maui.

The Prairie Rivers Network (PRN) v. Dynegy Midwest case in federal Central District Court in Illinois may be among the first cases to consider the application of the Maui decision to coal ash leaks. From the mid-1950s until 2011, the Vermilion plant burned coal and generated millions of tons of coal combustion residuals (“coal ash”). Dynegy and its predecessors mixed the coal ash generated at the plant with water in three unlined coal ash pits. The claim further asserts that:

Coal ash, such as that in the coal ash pits at the Vermilion plant, contains heavy metals and other toxic pollutants that are harmful and at times deadly to people, aquatic life, and animals. Among the contaminants found in coal ash are arsenic, barium, boron,

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262. Id. at 27,371.
266. Hawaii Wildlife Fund, 886 F.3d 737, 744 (9th Cir. 2018).
268. See Prairie Rivers Network v. Dynegy Midwest Generation, LLC, 350 F.Supp.3d 697, 706 (C.D. Ill. 2018) (granting motion to dismiss and holding that the discharges into groundwater—not directly into navigable waters—is not within CWA jurisdiction); see also Beaven, supra note 40.
chromium, lead, manganese, molybdenum, nickel, and sulfate. These contaminants can inflict severe harm, including brain damage, cancer, learning disabilities, birth defects, and reproductive defects. They are also dangerous to aquatic ecosystems, which is a significant concern where that contaminated groundwater is migrating into adjacent surface water bodies.271

Arguably, coal ash ponds are a discernible and discrete conveyance from which pollutants are discharged.272 In light of Maui, courts addressing coal ash contamination claims need to reconsider whether coal ash contaminants that flow through groundwater to reach navigable water are within the jurisdiction of the CWA.

IV. PRACTICAL IMPLICATIONS

What will be the impact of the Maui decision on industry, citizen group challenges and regulators’ determination of when a CWA NPDES permit is required? The majority in Maui included a nonexclusive list of seven factors to be considered in evaluating whether a discharge was the “functional equivalent” of a direct discharge:

(1) transit time,
(2) distance traveled,
(3) the nature of the material through which the pollutant travels,
(4) the extent to which the pollutant is diluted or chemically changed as it travels,
(5) the amount of pollutant entering the navigable waters relative to the amount of the pollutant that leaves the point source,
(6) the manner by or area in which the pollutant enters the navigable waters,
(7) the degree to which the pollution (at that point) has maintained its specific identity. [emphasis added]273

“Time” and “distance” traveled were referenced as the most important in determining “[w]hether pollutants that arrive at navigable waters after traveling through groundwater are ‘from’ a point source depends upon how

271. Id.
similar to (or different from) the particular discharge is to a direct discharge." The Court, however, did not provide any guidance on how to weigh the other factors. Fact-driven analysis in courts with differing emphasis on the various factors will lead to widely varying results. Whether it is the EPA or a state-delegated agency, they “will be required to develop an administrative record to support its permitting decision using this standard so that permitting decisions survive expected litigation.” Litigation over what information is needed to support a standard application is likely, and litigants in the remanded Maui case have already filed briefs on whether additional discovery is warranted.

To assess the collective impact of these factors, studies and reports by geologists will be necessary. Chemical transport and groundwater flow models will be developed to determine how long the transit time is for a particular physical nature of pollutant materials traveling through a particular medium. For example, liquids travel through sand and gravel much more quickly than they travel through silty media; karst topography is more porous. Hence time and distance are affected by the third factor: the nature of the material (soil type) through which the pollutant travels. Whether the pollutant enters navigable waters via a spring, a well, or over land (factor six) also affects time and distance, as does the elevation and slope of the land. What may appear as inconsistent application of the “functional equivalent” standard may instead result from factual differences in the medium. The amount that enters navigable waters (factor five) is in part informed by the extent the pollutant is diluted (factor four) and the extent to which it maintains its initial identity (factor seven). In tracing the flow of the pollutant from the point source to the navigable water, one method is to use an airborne thermal infrared imaging spectrometer that measures temperature at the point source and at the navigable water acceptance point.

274. Id. at 1476.
275. See generally id. (lacking any discussion on how to weigh the appropriate factors).
277. Id.
278. See A.B.A. Virtual SEER, supra note 229 (featuring Robert Young exploring the technical strategies for implementing groundwater regulation after the Maui decision).
The Maui Court’s opinion should not be viewed as a rejection of the “hydrological connection” standard in that it adopts the same basic factors for consideration as those that were articulated in the Kinder Morgan decision that was based on the hydrological connection standard. The “hydrological connection” standard in that case included an examination of time, distance geology, flow, and slope. The fact that the Maui majority did not give deference to the EPA’s recent alternative viewpoints further supports this position.

The geological methods, reports, and expert testimony will also be subject to Daubert prerequisites in federal court and 32 states. Federal Rules of Evidence Rule 402 provides that evidence is admissible only if it is relevant. Rule 401 defines “relevant evidence” as that which has “any tendency to make the existence of any fact that is of consequence to the

279. Id.  
280. See Kinder Morgan, 887 F.3d at 647 (discussing the Maui opinion).  
281. Id. at 651 (citing National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations, 66 Fed. Reg. 2960, 3017 (Jan. 12, 2001) (to be codified at 40 C.F.R. pts. 122 and 412)).  
284. Daubert, 509 U.S. at 587.
determination of the action more probable or less probable than it would be without the evidence.” \footnote{285} Rule 701 further provides that “[i]f scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.” \footnote{286} It is the duty of the trial judge to determine scientific testimony and evidence is admitted only if it is both relevant and reliable. \footnote{287} The earlier \textit{Frye} standard just focused on whether the expert’s opinion was generally accepted by the relevant scientific community. \footnote{288} The \textit{Daubert} case established a five-part test to aid in assessing whether testimony or evidence was admissible:

1. Whether the theory or technique employed by the expert is generally accepted in the scientific community;
2. Whether it has been subjected to peer review and publication;
3. Whether it can be and has been tested;
4. Whether the known or potential rate of error is acceptable; and
5. Whether the research was conducted independent of the particular litigation or dependent on an intention to provide the proposed testimony. \footnote{289}

Scientifically valid data questions and data with quality assurance will be needed. If the amount of the pollutant reaching the navigable water cannot be accurately quantified, can the analysis satisfy the Daubert standard? If scientists and engineers weigh the seven factors of the \textit{Maui} test, how will that be evaluated under the \textit{Daubert} criteria? Ultimately, will the impact of the pollutant on the navigable water drive the outcome with some judges rather than the details? Should such a complicated process be applied to a jurisdictional question? \footnote{290} Elber Lin, arguing for the County of Maui in oral arguments, urged that the after-the-fact examination of the “traceability” standard is too unpredictable as a trigger for CWA permitting. \footnote{291} Mr. Lin’s argument makes clear that because of the potential substantial fines associated with noncompliance, “regulated entities need to know beforehand whether a permit is required.” \footnote{292}

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285. \textit{Id}.
286. \textit{Id.} at 588.
287. \textit{Id.} at 589.
290. A.B.A. Virtual SEER, \textit{supra} note 229.
292. \textit{Id}.
The cost implications of the testing, reports, and expert testimony are exacerbated when they must occur to establish jurisdiction or satisfy a summary judgment versus if they are only needed if the case is actually tried. The Supreme Court could have established a standard that allowed jurisdiction if the traceable pollutant reached the navigable water through a hydrological connection, but it chose not to do so. By requiring analysis of these seven factors as a precursor to establishing CWA jurisdiction, the analysis becomes much more complex and costly at the threshold. The Kinder Morgan Amici Curiae brief in the Maui case projects the substantial burdens and costs on industries of implementing an unpredictable standard:

Given the enormous costs of compliance and sizable penalties for noncompliance, there must be a clear line that will enable potentially regulated entities to determine in advance whether a NPDES permit is required—not an utterly unpredictable standard that will force them to choose between obtaining a costly permit they should not need and risking massive fines for discharges the CWA was not meant to cover.293

Some state authorities believe, however, that the functional equivalent standard will not make a substantial change in their permitting processes.294

Other legal scholars and opponents argue that “the ‘functional equivalent’ standard could require NPDES permitting obligations for activities related to the construction of pipelines, injection wells associated with oil and gas production, chemical and industrial manufacturing, and even agricultural production.”295 The majority opinion in Maui downplays the risk that 650,000 wastewater reclamation facilities and over 20 million septic systems296 used in residential homes will need a permit, stating that

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294. Joel Reschly, Missouri Department of Natural Resources Legal Counsel, Environment & Energy Committee meeting Zoom presentation, Nov. 16, 2020 (notes on file with authors).


296. See e.g., REPORT TO THE TWENTY-NINTH LEGISLATURE STATE OF HAWAI’I, 2018 REGULAR SESSION RELATING TO CESSPOOLS AND PRIORITIZATION FOR REPLACEMENT (Dec. 2017), https://health.hawaii.gov/opppd/files/2017/12/Act-125-HB1244-HD1-SD3-CD1-29th-Legislature-Cesspool-Report.pdf (stating “Hawaii has nearly 88,000 cesspools that put 53 million gallons of raw sewage into the State’s groundwater and surface waters every day. Cesspools are an antiquated technology for disposal of untreated sewage that have the potential to pollute groundwater.”); See also Stuart Coleman, Finally Tackling a Crappy Situation, HAW. BUS. MAG. (2019),
states can “mitigate the harms through general permits and judges ‘can mitigate any hardship or injustice . . . with broad discretion to set a penalty’.”297

CWA citizen suits298 are likely to be the primary vehicle for raising the issue of whether a permit is necessary and could be quite costly with the geological reports necessary to establish jurisdiction. Citizen suits provide a mechanism to assure compliance and enforcement when the administering agencies either fail to act or choose not to act. During the Trump administration, has been unlikely that the EPA would raise the issue when the overarching priority of the administration was to lessen regulatory burdens on businesses. The new Trump rule excluding groundwater from the scope of WOTUS299 also makes the application of the “functional equivalent to a direct discharge” standard even more murky to apply.

CONCLUSION

The CWA (1972) envisioned a partnership between the states and federal government to clean up America’s waterways. It was not intended to be a jurisdictional competition to facilitate businesses’ circumvention of that goal. After all, the original expectation—be it naïve—was to have all U.S. waterways fishable and swimmable by the mid-1980s.300 Any standard that hinders the basic goal of the CWA needs to be reevaluated. Clearly, the Trump administration’s abandonment of the “hydrological connection” standard and its declaration that pollutants that migrate through groundwater to reach navigable water are immune from federal NPDES permitting is counterintuitive to the goal of the CWA.

The “functional equivalent to a direct discharge” standard articulated by the Supreme Court in Maui—while well-intended and initially hailed as a pro-environmental decision—may devolve into an analysis that lets businesses avoid their role in preventing or minimizing pollution. If the financial burden of proving jurisdiction is moved away from the discharger, then there is a high likelihood that polluters will be able to discharge without

https://www.hawaiibusiness.com/tackling-a-crappy-situation/ (discussing scientific studies on sewage waste in Hawai‘i). According to Joss Hill (Associate Program Director at the Coral Reef Alliance), “[d]ye tracer studies conducted by the University of Hawai‘i at Hilo found that sewage from cesspools, septic tanks and ATUs enters the marine environment through groundwater along the shore within five hours to 10 days – and there is no difference between systems.” Id. Further, according to Professor Roger Babcock, “[d]ye tracer studies conducted by the University of Hawaii at Hilo found that sewage from cesspools, septic tanks and ATUs enters the marine environment through groundwater along the shore within five hours to 10 days – and there is no difference between systems.” Id.

297. Maui, 140 S. Ct. at 1477.
full accountability. As a practical matter, this shift in burden also would eviscerate the viability of the citizen suit provisions of the CWA, as it would impose an enormous financial burden on the non-discharging party.\textsuperscript{301} This consequence is especially possible if the business can convince a sympathetic judge that time and distance are too great—even though their pollutants are clearly traceable to the contamination of the waterway. In addition, the time to develop and decide the threshold jurisdictional issues with an ongoing leak or migration of a pollutant is contrary to the goal and necessity for prompt mitigation. The burden is properly borne by the discharger to either refrain from polluting or to take all steps necessary to comply with the CWA standard that require treatment at the point of discharge using the best available technology.\textsuperscript{302}

If any of the pollution can get to the sea from a point source, its progress must be prevented or mitigated. The seven factors should not be insurmountable barriers to jurisdiction. Factors such as dilution should not be relevant to the question of jurisdiction, but instead should be related to the remedy imposed. In fact, an essential benefit of the CWA structure is that it addresses treatment of pollutants at the point of discharge as well as in the receiving waters. This eliminated the pre-CWA reliance on dilution as a solution to highly concentrated discharges. Those factors may be relevant to determining the best way to stop or treat pollution, or relevant to assessing cleanup costs, but those factors should not be a prerequisite to jurisdiction.

To foster the CWA’s goal of restoring the integrity of the nation’s waterways, the following measures should be adopted:

1. Clarify that the pollutant does not have to be directly discharged into a navigable water to necessitate a permit.
2. Clarify (both in regulations and in legislative amendments to the CWA) that pollutants reaching waters of the U.S. can be regulated even if the pollutant travels through groundwater or other conduits or conveyances.\textsuperscript{303}
3. Re-adopt the “hydrological connection” standard in regulatory policy and statutory language.
4. Link the importance of the hydrological connection to the evaluation of the “functional equivalent of a direct discharge” (if that standard is maintained).
5. Place the burden of proof on a business to demonstrate that its discharge is not the functional equivalent of a direct discharge.

\textsuperscript{301} See generally RCRA, 42 U.S.C. § 6972 (incorporating citizen suit authority and procedures).
\textsuperscript{302} See 40 C.F.R. § 125.3 (1990) (outlining discharger’s technology-based treatment requirements in permits).
6. Re-broaden the scope of waters subject to CWA jurisdiction, rather than narrowing the definition of WOTUS, with necessary legislative changes. The definition of WOTUS should not be left to a regulatory agency, but rather should be affirmatively articulated by Congress.

7. Reinforce cooperative federalism rather than jurisdictional policies that undermine the purpose of the CWA of maintaining, restoring, and fostering integrity of water quality.

Justice Stevens’ *Rapanos* dissent emphasized that “Congress’ intent in enacting the [CWA] was clearly to establish an all-encompassing program of water pollution regulation.” 304 In passing the CWA, Congress emphasized that it is “essential that discharge of pollutants be controlled at the source.” 305 As Justice Breyer said in his dissent in the *Rapanos* case, where he criticized the “sufficient nexus” standard, if there is not sufficient guidance for administrative agencies, “courts will have to make ad hoc determinations that run the risk of transforming scientific questions into matters of law.” 306 Unfortunately, that risk of insufficient guidance reemerges with Breyer’s “functional equivalent” standard in the *Maui* decision. 307 While the impact on navigable waters could drive the outcome of cases, the *Maui* case may lead to an analytical quagmire that could benefit industries that hope to circumvent permits. 308 Jurisdictional nuances should not obstruct the goal of minimizing pollutants that contaminate water.

To prevent and minimize pollution, and to improve the quality of the waters throughout the United States, consistent, scientific-based standards need to be applied that recognize the interconnectedness of watersheds and use of water resources beyond individual state boundaries. Where contaminants in groundwater significantly affect the quality of navigable waters, there should be jurisdiction to regulate the discharge of those contaminants. If the contamination has already occurred, a “traceability” standard makes sense. It is counterintuitive to use a hindsight test to determine jurisdiction through the “functional equivalent of a direct discharge,” where the goal is to prevent the pollution of groundwater and navigable water.

A hindsight test creates unnecessary costs and hurdles for determining CWA jurisdiction for citizen suits, businesses, and regulators. Businesses and municipalities need to know up front whether their prospective

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307. *Maui*, 140 S. Ct. at 1481 (Thomas, J., dissenting).
308. See id. (establishing that the Court gives no guidance for apply the standard).
discharges require CWA NPDES permits and the 47 states with delegated NPDES authority also need more specific guidance. The hindsight test hinders the proactive CWA goal of preventing and promptly mitigating contamination of our nation’s waterways. If the pollutant is likely to reach navigable waters that are hydrologically connected, the source should be regulated.
A GROWING NEED: INCREASING AGRICULTURAL AND URBAN FORESTATION TO COMBAT CLIMATE CHANGE

Rebecca Robbins*

ABSTRACT

Centuries of deforestation and reliance on carbon dioxide-emitting technologies have created a growing climate change crisis in the United States and across the globe. Since colonial times, the U.S. has lost approximately 74% of its forest cover. This dramatic loss of carbon-absorbing forest cover significantly contributes to global climate change but tends to receive far less policy attention than strategies focused on curbing carbon dioxide emissions. This Article argues that far more aggressive and innovative forestation policies are warranted across the country and proposes multiple potential policy approaches to increasing the nation’s forest cover. After describing America’s history of deforestation, this Article highlights several benefits of trees and some basic obstacles governments tend to encounter when seeking to increase tree planting and maintenance. The Article then examines existing federal, state, and local policies aimed at incentivizing reforestation and forest conservation, explaining why these approaches are not nearly aggressive enough to drive optimal levels of tree-related investment. This Article ultimately advocates for bold and innovative new policies at the federal government level, including expanded federal tax incentives and amendments to Farm Bill programs designed to increase farmer participation in agroforestry. The Article also describes specific ways for cities to better leverage the power of trees to improve citizens’ health and well-being while also helping to slow the pace of climate change.

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INTRODUCTION

Alaska’s Tongass National Forest is the world’s largest intact temperate rainforest. This vast area, which is home to over 31 Alaskan communities and a diverse array of wildlife including bears, eagles, and salmon, also hosts millions of valuable old-growth cedar, hemlock, and spruce trees. Incredibly, within months of President Donald J. Trump’s announced support for a global initiative aimed at planting one trillion new trees, his administration revealed plans to allow logging in 9.2 million acres of this unique forest. To accelerate this new logging, the Administration proposed lifting the existing federal Roadless Area Conservation Rule and expanding road construction. President Trump’s proposed plan would make thousands of acres of old-growth forest newly available for clear-cutting each year. Not only would cutting thousands of acres of trees in the Tongass forest permanently harm environmental ecosystems and Alaskan communities, it would also significantly contribute to rising carbon dioxide concentrations in the global atmosphere.

2. See id. (discussing wildlife in the Tongass National Forest).
3. Donald J. Trump, President of the United States, Address Before a Joint Session of the Congress on the State of the Union (Feb. 4, 2020).
6. See Heller, supra note 4 (discussing a proposal to ease restrictions on road construction).
7. Id.
Since the dawn of the Industrial Revolution, carbon dioxide levels have steadily increased due to deforestation and increased uses of carbon-emitting technologies.\textsuperscript{9} Ironically, these rising greenhouse gas levels are particularly impacting places like Alaska.\textsuperscript{10} Alaska is warming more quickly than any other state in the country—nearly twice as fast as the global average.\textsuperscript{11} Alaskan sea ice is also decreasing because seawater temperatures are steadily rising.\textsuperscript{12} Climate change in Alaska also led to other adverse effects, such as more frequent and powerful wildfires.\textsuperscript{13} Fires in these cold regions are especially troubling because they break open permafrost and release carbon gases that have been trapped for hundreds or even thousands of years.\textsuperscript{14}

Never has there been a more crucial time to promote reforestation than in this era when the federal government seems increasingly intent on chopping down trees. Trees remove carbon dioxide from the air, which helps minimize the effects of climate change.\textsuperscript{15} Because the U.S. covers a massive geographic area and has a relatively temperate climate,\textsuperscript{16} expanding the nation’s forests could substantially decrease the amount of carbon dioxide (CO\textsubscript{2}) in the atmosphere.\textsuperscript{17} The U.S. has approximately 749 million acres of forestland covering about 33\% of the nation’s total land area.\textsuperscript{18} These vast forests remove nearly 13\% of total U.S. greenhouse gas emissions per year and offset approximately 16\% of annual carbon dioxide emissions, but those positive effects could be greater if there were more trees.\textsuperscript{19}

\textsuperscript{11} Id.
\textsuperscript{12} Id. (reporting surface waters along Alaska’s west coast were 4°F to 11°F warmer than average in 2019).
\textsuperscript{14} Id.
\textsuperscript{17} Leahy, supra note 15.
Reforestation, or the mass replanting of trees to regenerate forest landscapes, is an underappreciated potential weapon against climate change. According to the United Nations’ Intergovernmental Panel on Climate Change (IPCC), planting trees is “the only technology” currently available to remove atmospheric carbon dioxide at a large scale. The IPCC’s hypothesis was promoted by a major research article released in July 2019, which emphasized the great potential for global reforestation efforts to combat climate change. The report also identified several areas in the world—including many regions within the U.S.—where trees could be planted without inhibiting agricultural growth or imposing on urban areas.

This Article analyzes existing policies aimed at promoting reforestation within the U.S. and ultimately argues for certain specific policy strategies capable of significantly increasing tree planting activities. Implementing more aggressive and innovative reforestation policies at all levels of government has the potential to reduce the nation’s CO₂ emissions and slow the pace of global warming quickly and powerfully.

Part I of this Article provides background information detailing carbon dioxide’s effect on climate change, how humans are contributing to these effects, and how trees can help reduce atmospheric carbon dioxide levels. Part I also describes the potential benefits and detriments of increased forestation across the nation. Part II examines current U.S. reforestation policies at the federal, state, and local government levels, and highlights the strengths and weaknesses of these current strategies. Part III suggests that more aggressive federal tax incentives would be a cost-effective means of motivating farmers to embrace agroforestry practices capable of greatly decreasing atmospheric carbon dioxide levels. Part IV explains how stronger tree-related policies at the municipal level would drive rapid increases in forestation activities within urban settings.
I. Carbon Dioxide, Humans, and Trees

There is broad scientific consensus that the global increase in atmospheric carbon dioxide levels documented in recent decades is largely attributable to human activities.24 This section discusses how carbon dioxide contributes to a warmer atmosphere, how human activities throughout history—including activities involving trees—have increased carbon dioxide levels and created the current climate crisis, and why an increased focus on tree planting, maintenance, and preservation could help to address these challenges.

A. Deforestation and Global Warming

It is a well-established scientific fact that the increased level of carbon dioxide (CO₂) in the atmosphere contributes to global warming.25 CO₂ is a greenhouse gas and adds to the greenhouse effect, which occurs when certain gases in the atmosphere block heat from escaping.26 This means that CO₂ absorbs heat within the atmosphere and gradually releases it over time.27 Unlike oxygen or nitrogen, which are the most abundant molecules in the atmosphere, greenhouse gases absorb much of Earth’s radiated heat, which causes the atmosphere to warm over time.28 To some extent, this natural greenhouse effect is beneficial because without it, the planet’s average temperature would be too cold to support most of the planet’s ecosystems.29 However, growing concentrations of greenhouse gases in the atmosphere over the past couple of centuries are raising temperatures and creating numerous costly secondary effects.30 Global warming is shifting agricultural growing seasons, causing glaciers to shrink more rapidly, sea levels to rise, and making weather patterns in the summer and winter more extreme.31

29. Id.
Unless dramatic actions are taken to reduce concentrations of greenhouse gases in the atmosphere, scientists predict that the warming—and its negative consequences—will only worsen in the coming decades.\(^{32}\)

From a policy standpoint, reducing atmospheric CO\(_2\) is a priority because CO\(_2\) is the most abundant greenhouse gas and remains in the atmosphere longer than most other greenhouse gases.\(^{33}\) Although CO\(_2\) is released through natural processes such as respiration and volcanic eruptions,\(^{34}\) it is also released through human activities such as burning fossil fuels or other carbon-based materials.\(^{35}\) Some studies suggest that human-caused increases in atmospheric CO\(_2\) levels are likely responsible for at least two-thirds of the temperature increases already experienced across the globe.\(^{36}\) Indeed, researchers have suggested that CO\(_2\) levels today are higher than they have been at any point in the last 800,000 years.\(^{37}\)

The U.S. is one of the largest CO\(_2\) emitters in the world, second only to China.\(^{38}\) Since the Industrial Revolution in the late 1700s, emissions from fossil fuel combustion in the U.S. and elsewhere have consistently increased the atmospheric CO\(_2\) levels.\(^{39}\) Processes used to clear land for agricultural use, industry, and other human activities have also increased greenhouse gas concentrations.\(^{40}\)

Although increased greenhouse gas levels are largely attributed to more recent human activities, the actions of early American settlers also significantly contributed to global warming. When colonization began in earnest in the early 1600s, roughly one billion acres of forest covered the nation.\(^{41}\) The vast amounts of trees covering the nation in the 1600s intimidated European settlers and even prompted some logging aimed simply

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32. Id.
34. See generally NAT’L AERONAUTICS & SPACE ADMIN., supra note 24 (explaining atmospheric CO\(_2\) occurs naturally and anthropogenically).
35. See generally id. (stating evidence shows atmospheric CO\(_2\) levels have increased by over one third since the Industrial Revolution).
36. See Lindsey, supra note 27 (explaining that CO\(_2\) is responsible for two-thirds of energy imbalance causing temperature rise).
37. See id. (explaining how carbon dioxide levels have increased).
38. Id.
39. Earth Observatory, supra note 9.
40. See Lindsey, supra note 2777 (showing that land use changes have contributed to increase in carbon dioxide emissions); see Ottmar Ebenhof et al., Summary for Policy Makers: Mitigation of Climate Change, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (2014), https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_summary-for-policymakers.pdf.
at ridding the land of its dark forests. Of course, over the ensuing 200 years, Americans continued to aggressively deforest large swaths of the nation’s land. They cut down over half of the Northeast’s forests to clear land for agricultural use, support the logging industry, and provide wood for railroad companies. Today, only 286 million acres of trees remain, meaning that the U.S. has already destroyed roughly 71.4% of its native forests.

B. Obstacles to Optimal Tree Planting and Conservation

Several obstacles have historically deterred governments and individuals across the U.S. from adequately investing in planting and maintaining trees. The most basic among them is that existing markets and policies tend to insufficiently promote tree protection and planting. Planting and maintaining large numbers of trees is expensive. One recent study determined that an average tree costs about $18 annually for watering and maintenance alone. Because those who plant and maintain trees rarely capture all the societal benefits of their actions, few governments and individuals are willing to voluntarily make optimal levels of investment in tree planting.

1. Location-Related Constraints on Tree Planting

Climatological constraints further impede tree planting and complicate tree-related policymaking. As the popular motto “Right Tree, Right Place”

42. Id.; See George H. Stankey, Historical Roots of Wilderness Concept, 29 Nat’l Res. J. 9, 14–19 (1989).
43. Buck, supra note 41; see Stankey, supra note 42, at 20–21 (describing attitudes towards the wilderness in the new world).
44. See National Geographic Society, Deforestation, NAT’L GEOGRAPHIC RES. LIBR., ENCYCLOPEDIIC ENTRY (last updated July 16, 2019) (“In North America, about half of the forests in the eastern part of the continent were cut down from the 1600s to the 1870s for timber and agriculture.”), https://www.nationalgeographic.org/encyclopedia/deforestation/; See also Stankey, supra note 42, at 18 (“Much of the drive to subdue the wilderness was not motivated by the desire to convert it into civilization as it was to capture the values it held-its timber, its minerals, its soils.”).
45. Buck, supra note 41.
suggests, certain regions and climates are only capable of supporting the growth of certain tree species. These locational constraints make it difficult to promote increased forestation as a solution to climate change because it is not always clear which tree species are best suited for any given location. In some locales tree planting is not cost-justifiable at all. In fact, in some locations, planting too many trees of the same species could ultimately harm or destroy delicate ecosystems. For instance, given the large quantity of water that trees require to survive, planting too many in a given area may have major adverse effects on the area’s groundwater supply. Similarly, overplanting trees in the upstream areas of a watershed can potentially deplete water resources and indirectly impose damages hundreds of miles downstream.

The extended time it takes for many types of trees to mature only further complicates policymaking related to tree planting and maintenance. Because some trees take upwards of 50 years to mature, some have reasoned that certain forested land may be more valuable in the short term if used differently. Once trees are planted, the land is often largely unavailable for most other uses, including agricultural activities and real estate development.

2. Potential Warming Effects of Tree Planting

Some opponents of tree planting have argued that it might actually increase global warming, even though in most cases planting trees produces net benefits in the fight against climate change. One line of arguments made

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50. See id. (suggesting that it is not cost-justifiable to plant a tree that will not survive or grow due to poor planning).
51. See Daniel B. Blanco, We Can’t Just Plant Billions of Trees to Stop Climate Change, DISCOVER MAG. (July 10, 2019), https://www.discovermagazine.com/planet-earth/we-cant-just-plant-billions-of-trees-to-stop-climate-change (Many commercial tree farms practice monoculture, the growth of a single plant species over a large area of land. Unfortunately, monoculture practices can generate additional environmental costs because a greater biodiversity of plant life often fosters more healthy ecosystems and decreases wildfire risks.).
52. Id.
55. Id.
against tree planting and maintenance relates to the equipment commonly used for such activities, which is typically gas-powered and thus emits carbon dioxide. Vehicles for transporting saplings, chain saws for pruning, chippers to clear unhealthy trees, and other tools used in the process of planting and caring for trees can emit large amounts of CO₂, which surely offset some of the decarbonization effects of tree planting.

A few tree planting adversaries argue that trees themselves could increase global warming because of their darker color. Under this theory, an increase of darker-toned trees across a landscape decreases the planet’s albedo or reflection of light back into space, causing more heat to remain in the atmosphere. It is true that some tree leaves absorb more sunlight than other types of land cover such as fields or bare ground. Accordingly, planting those tree species may decrease the Earth’s surface albedo by reflecting less sunlight back into space and thereby slightly increase global warming. However, in most cases it is highly doubtful that these potential adverse effects outweigh the potential carbon-reducing power of trees.

C. The Many Benefits of Trees

In addition to helping reduce atmospheric CO₂ levels, trees provide multiple other valuable benefits. The following materials describes some of the many societal benefits of trees, many of which are not fully captured by those who plant and maintain them.

1. Trees Decrease Atmospheric CO₂

Trees directly absorb CO₂ in their stems and leaves while they grow. Trees use roots to take in water, chloroplasts to take in carbon dioxide from the air, and energy from the sun to create a photosynthetic reaction that...
reorganizes the molecules into sugar and oxygen. This sugar is further broken down for the tree to use as energy while the excess oxygen is released back to the atmosphere. On average, it takes an acre of forest to absorb twice the amount of CO\textsubscript{2} produced by the average car’s annual mileage. Besides CO\textsubscript{2}, trees trap other greenhouse gases and airborne pollutants, removing them from the atmosphere in ways that help promote healthy respiratory systems in humans and animals.

Because trees sequester large amounts of CO\textsubscript{2}, destroying trees reverses many of their positive benefits. Trees contain large quantities of carbon-based compounds that are turned into wood, leaves, and other essential tree parts. Therefore, deforestation releases large amounts of carbon back into the atmosphere because the carbon-using tissues in harvested trees no longer need that carbon and thus emit much of it into the air.

2. Broader Societal Benefits of Trees

In addition to reducing atmospheric CO\textsubscript{2} levels, trees provide other benefits to the ecosystems and individuals around them. For example, trees strategically planted near buildings have been proven to provide an array of health benefits for workers, patients, and students because they incentivize outdoor activities and are aesthetically pleasing. The ability to view trees and green spaces from work or school windows increases learning and work productivity. And trees near hospitals have even proven to decrease recovery time in patients. One study providing a “comprehensive summary of existing literature on the health impacts of urban trees” mentions a "12% lower..."
prevalence of obesity in preschool children.” Because trees tend to induce more outdoor interactions, they may likewise help reduce levels of domestic violence and foster safer and more sociable neighborhood environments.

Trees provide a multiplicity of benefits for homeowners as well. They cast shade on homes, lowering the inside temperatures and thereby reducing demand for electric power to cool homes on hot days. This increase in shade can greatly decrease a household’s energy bills during the summer. Likewise, trees can serve as windbreaks in yards, reducing winter heating bills by lowering the wind chill near homes. In some settings, trees can even increase housing prices. One study determined that neighborhood trees could increase median neighborhood prices by more than $9,000.

Trees likewise provide valuable habitat for wildlife, including shelter and food for a wide variety of birds and small animals. For example: flowers, fruits, and woody parts of trees provide sustenance for some wildlife; bacteria and fungi contained in some tree parts make nesting easier for birds; many trees contributed to increased soil fertility; and many types of trees are capable of providing structures for burrowing by certain land animals.

3. Specific Benefits of Urban Trees

In addition to providing valuable benefits to individuals and animals, trees often have positive broader impacts on urban communities. In many urban areas, tree canopies produce valuable shade in parking lots and along streets where cars park. By shading asphalt surfaces and parked vehicles, trees reduce hydrocarbon emissions—or Volatile Organic Compounds (VOCs)—from gasoline, which can evaporate out of leaky fuel tanks and


73. MCPHERSON ET AL., supra note 47, at 25.


75. Id. at 1326.


80. Id.
worn hoses. These reductions in evaporated VOCs help even more to slow the rate of climate change. Healthy trees can also reduce pollution from storm water runoff. Tree leaves intercept and store rainfall, and tree roots can increase the rate at which rainfall infiltrates soil and the water storage capacity of the soil itself. These benefits are particularly important for cities, since federal law requires states and localities to control nonpoint-source pollution such as runoff from pavements, buildings, and landscapes. Trees can likewise reduce wastewater treatment costs because nurseries can often be irrigated with tertiary treated wastewater rather than fresh water. Irrigating nurseries with wastewater may even help to further clean the water because the soil acts as a natural filter.

II. THE ROOTS OF THE PROBLEM: EXAMINING EXISTING U.S. TREE POLICIES

Despite well-established evidence that trees are critical tools in the fight against climate change and provide numerous other valuable benefits, much of the nation’s existing policy structure seems more tailored to promote deforestation than to encourage reforestation. Part II describes several current federal and local policies aimed at encouraging forestation and explains why these incentives, programs, and goals are not nearly aggressive enough to help decrease the nation’s net CO\textsubscript{2} emissions levels. The nation’s underinvestment in tree planting and maintenance is attributable—at least in part—to a simple positive externality problem: individuals and businesses that plant and maintain trees ordinarily bear all, or nearly all, of the cost of doing so but reap only some of the benefits. As highlighted above, trees can produce shade along public sidewalks, clean the air, absorb atmospheric CO\textsubscript{2}, decrease stormwater pollution, and serve other valuable functions. Many of these benefits accrue to those other than those who plant and maintain trees.

81. McPherson et al., supra note 47, at 22.
82. See generally California Urban Forestry Act, PUB. RES. §§ 4799.07-.09 (1978) (describing that urban forestry improves the health and quality of urban environments).
83. Id.
84. Id.
85. Id.
86. Id. at 24.
87. Id.
88. See Mandel, supra note 48 (citing problems with underinvestment in nurseries and training); see also Heather A. Sander et al., The Value of Urban Tree Cover: A Hedonic Property Price Model in Ramsey and Dakota Counties, Minnesota, USA, 69 ECOLOGICAL ECON. 1646, 1646 (2010) (citing data on different urban forestation efforts and their associated costs and benefits).
89. Supra Part I.C; see Sander et al., supra note 88, at 1646–48 (discussing unmonetized positive externalities of trees).
Market forces alone have proven inadequate to produce socially optimal investments in trees. Because trees create positive externality problems, there is a need for governments to intervene more aggressively to help correct this market failure. Unfortunately, existing federal, state, and local government incentives and policies are not strong enough to effectively do so. The following subsections describe some of the nation’s existing forestation policies and highlight how they are falling short in driving optimal levels of tree-related investment.

A. Federal Policy Approaches

Existing federal tax incentives, the 2018 Farm Bill (Farm Bill) programs, and loan guarantees in the U.S. fail to incentivize optimal levels of tree planting and forest conservation. Most existing federal incentive programs related to trees are unsuccessful at encouraging farmers to embrace agroforestry practices because they are too complicated, not sufficiently advertised, or not enticing enough to persuade citizens to act.

1. Federal Tax Incentives

Although the Internal Revenue Code (IRC) offers multiple tax incentives that encourage certain forestry practices, existing incentives have largely proven ineffective at promoting forestation goals. For example, one IRC provision allows qualified timber properties to claim special tax deductions for reforestation expenditures through an accelerated amortization schedule. Under IRC § 194(a), a taxpayer may claim a deduction using “amortization of the amortizable basis of qualified timber property based on a period of 84 months.” In subsection (b) of that section, a farmer may treat certain reforestation expenditures as a deduction. However, § 194 applies


94. Id. § 194(a).

95. Id. § 194(b).
only to “qualified timber property,” which means that a taxpayer must have commercial quantities of trees used solely for the commercial production of timber products.\textsuperscript{96} Moreover, this tax incentive cannot be used in conjunction with other reimbursements provided under governmental reforestation cost-sharing programs.\textsuperscript{97}

Although §194 is arguably the IRC’s most direct tax incentive for reforestation expenditures, it fails to effectively encourage long-term reforestation investments for a multitude of reasons.\textsuperscript{98} Among other things, §194 does not provide incentives for small farms because it targets only large commercial timber companies.\textsuperscript{99} Accordingly, it rewards only those taxpayers who plant trees for the purpose of harvesting them later. These limitations ironically provide greater incentives for less environmentally-friendly actors because once commercially harvested trees are cut they stop sequestering carbon and may even release much of their previously stored carbon back into the atmosphere.\textsuperscript{100} Moreover, §194 allows farmers to collect only one-time deductions for their reforestation efforts,\textsuperscript{101} thus failing to continuously encourage them to plant and maintain trees. Such incentives would better reward continued maintenance and preservation of trees if they somehow allowed for deductions over several years rather than a single deduction.

Another tree-related incentive provision in the IRC excludes cost-share payments that are currently available through environmentally friendly programs.\textsuperscript{102} Section 126 protects farmers that participate in these programs from entering into a higher tax bracket and ensures that the money farmers receive from the programs is tax free at the end of the year.\textsuperscript{103} This includes participation in any state program where payments are made to farmers for the purpose of restoring the environment, improving forests, or providing a habitat for wildlife.\textsuperscript{104} Unfortunately, §126 does not directly incentivize tree planting; it simply provides farmers with a monetary safe haven for

\textsuperscript{96} Id. § 194(c)(1) (defining qualified timber).
\textsuperscript{97} Id. § 194(c)(3)(B).
\textsuperscript{98} Steven H. Bullard & Thomas J. Straka, Structure and Funding of State-Level Forestry Cost-Share Programs, 5 N. J. APPLIED FORESTRY 132, 133 (1988).
\textsuperscript{99} 26 U.S.C. § 194(c)(1); U.S. DEP’T AGRIC., supra note 92, at 15; See U.S. DEP’T AGRIC., AMERICA’S DIVERSE FAMILY FARMS, 3 (2020) (defining a small family farm as having a gross cash farm income of less than $350,000 a year).
\textsuperscript{100} Blanco, supra note 51.
\textsuperscript{101} 26 U.S.C. § 194(a) (explaining the deduction is based on a period of 84 months).
\textsuperscript{103} Id.; 26 U.S.C. § 126; Id. § 126(b)(1)(B) (excluding funds received from under a list of programs from taxation provided they do not significantly increase recipient’s annual income).
\textsuperscript{104} Id. § 126(a)(8).
participation in particular programs. Accordingly, the provision does little to encourage farmers to plant more trees. To better incentivize farmers to engage in tree planting programs, the IRC would need to allow for direct reimbursement for sustained reforestation efforts.

One other noteworthy federal forestation tax incentive is IRC § 175. Section 175 allows for a deduction of expenses incurred for the purpose of soil or water conservation, the prevention of erosion of land, or for endangered species recovery on agricultural land. Deductible actions include the establishment of windbreaks and planting of trees to reduce or prevent erosion. Section 175 is the only IRC section that promotes forestation for the sole reason of protecting the environment. Although § 175 is a positive step, it is unfortunately not strong enough to drive significant increases in private reforestation activities.

2. Farm Bill Programs

In addition to offering general tax incentives, the federal government has crafted certain policies designed specifically to encourage farmers to plant trees. At least three programs administered by the United States Department of Agriculture (USDA) encourage reforestation, but none have proven highly effective at driving tree planting and maintenance on U.S. farms. Six programs administered by the Natural Resources Conservation Service (NRCS), a sub-agency of the USDA, that encourage farmers to maintain in-place foliage have also done little to promote the planting of new trees.

The USDA’s existing tree-related programs include the Forestry Stewardship Program, the Conservation Reserve Program (CRP), and the Conservation Reserve Enhancement Program (CREP). The Forestry Stewardship Program primarily helps landowners plan for, and maintain, healthy forests. Under the CRP and CREP, the federal government essentially leases private farmland for the purpose of planting native species

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105. See id. § 126 (providing only taxation standards for program fund awards and exceptions to those standards).
106. 26 U.S.C. § 175 (a) (applying to those engaged in the business of farming); see id. § 175(b) (explaining that farmers may deduct up to 25% of their gross farm income derived from farming).
107. Id. § 175(a); Id. § 175(c)(1).
108. Id. § 175(c)(1).
as a means of conserving the “natural land.”  

Farmers are compensated under the legislation for voluntarily taking their land out of production and allowing the federal government to maintain native tree species on the property.  

Programs administered by the NRCS similarly provide funding for private land conservation and stewardship. These programs encourage farmers to maintain current forestry conservation measures but do not incentivize new planting. For example, the Environmental Quality Incentives Program, Conservation Stewardship Program, and Healthy Forest Reserve Program encourage environmental management and stewardship by providing farmers with various modest assistance programs.  

Although it is the only federal program to list carbon dioxide sequestration as a positive benefit of reforestation, it does not encourage new planting.  

As just described, existing federal Farm Bill tree programs reward farmers’ conservation efforts but do not go nearly far enough to promote optimal levels of tree planting. Today’s Farm Bill reforestation programs have generally been unsuccessful at encouraging reforestation for a multitude of reasons, including the reality that most farmers are not aware of them. Meanwhile, some other programs have proven less than effective, in part, because they provide only educational tools and no monetary incentives. And even those programs that do provide monetary incentives are not rewarding enough to entice many farmers to participate in them. To address these efficiencies, the government should revise federal reforestation policies to.


114. Healthy Forests Reserve Program, supra note 113.  

115. See id. (explaining that the program promotes the restoration or protection of forestland rather than planting new trees).
3. Agricultural Loan Guarantees

There are two federal loan programs used to incentivize certain farming activities. These programs should be reworked to encourage tree planting on private agricultural lands. First, the federal Farm Service Agency (FSA)\textsuperscript{116} makes and administers direct loans to farms in an effort to help “keep America’s agriculture growing.”\textsuperscript{117} These loans, which are financed and serviced by the FSA with funding from the USDA budget,\textsuperscript{118} help farmers in several ways: to become owner-operators of family farms; to improve or expand current operations; to increase farm productivity; and to assist with land stewardship to help preserve land for future generations.\textsuperscript{119}

Second, loan guarantee programs are another type of federal loan assistance available to farmers.\textsuperscript{120} Under these programs, a bank provides the loan funding rather than the FSA.\textsuperscript{121} However, if a farmer defaults on the loan, the FSA “guarantees” the loan against 95\% of significant loss of principal or interest.\textsuperscript{122} Loans to farmers are obviously far less risky to banks when the FSA guarantees them in this way, so these programs can make it much easier for farmers to secure the financing they need on reasonable terms.\textsuperscript{123} Conceivably, these programs could be similarly used to help farmers to finance various eligible tree planting and maintenance activities.

\textsuperscript{117} See id. (explaining the types of farm ownership loans available).
\textsuperscript{118} Id.
\textsuperscript{119} Id.; See also Direct and Guaranteed Farm Loans: Providing Loans to Family Farmers & Ranchers to Purchase Land & Assets, or Finance Annual Operating Expenses, NAT’L SUSTAINABLE AGRIC. COAL., https://sustainableagriculture.net/publications/grassrootsguide/farming-opportunities/farm-ownership-operating-loans/#basics (last visited Nov. 12, 2020) (explaining what farm loans are available and how they work).
\textsuperscript{120} See id. (“Direct loans are made and administered by local FSA offices, while guaranteed loans are made and administered by banks, credit unions, community development financial institutions (CDFIs), or other lenders.”).
\textsuperscript{121} Id.
\textsuperscript{123} Farm Service Agency Definition of Family Farm for Loan Programs, CTR. FOR RURAL AFFS. (July 18, 2010), https://www.cfra.org/node/2856. Besides general loan requirements, a farmer applying for a loan under the Farm Bill must run a ‘family farm.’ Id. A family farm under the FSA definition means that the farmer’s family provides most of the day-to-day labor, that a family member is the ‘decision maker’ of the farm, and that family members provide both physical labor and management for the farm. If all these requirements are met, then the farmer runs a family farm and can apply for either a Direct or Guarantee loan under the Farm Bill. Id.; see NAT’L SUSTAINABLE AGRIC. COAL., supra note 119 (stating that other requirements include but are not limited to: being a U.S. Citizen, having no previous debt forgiveness from the FSA, being unable to secure a loan elsewhere without the FSA’s help, and being able to show sufficient farm managerial experience through education).\textsuperscript{119}
B. Existing State and Local Urban Forestry Policies

In addition to encouraging more tree planting in rural areas, the government could do much more to incentivize tree planting in urban settings. States and municipalities across the country vary significantly in their approaches to tree planting and conservation policies. The materials that follow highlight several examples of local policies designed to encourage urban forestry.

1. Tree Canopy Goals

Some cities in the U.S. adopted specific tree canopy goals designed to encourage increased tree planting in urban areas. An urban tree canopy is a layer of tree leaves, branches, and stems that provides shade. Tree canopy goals are simple standards that promote urban forestry and the various benefits these activities can provide, including increased shade cover, carbon dioxide absorption, and improved green spaces. As suggested in Part I, many of these benefits accrue to parties other than the municipal governments in which the trees are situated. Nonetheless, large cities are increasingly implementing tree canopy goals. For instance, the City of Phoenix, Arizona, implemented a “Tree Canopy and Shade Master Plan” in 2010 that seeks to increase the use of tree canopy shade to address urban heat issues. To date, the city’s approach largely appears to be succeeding. Since its implementation, Phoenix has recorded annual benefits that include removal of 1,700 tons of air pollution, sequestration of 35,400 tons of carbon, production of 89,200 tons of oxygen, and about 91.7 million cubic feet of avoided storm water runoff.

Other cities in Arizona and across the U.S. have similarly reaped significant benefits from tree canopy goals and planning. Tempe, Arizona,
adopted an Urban Forest Tree Canopy plan to become a “20 minute city” by the year 2040. The city plans to use a city urban forester, landscape architects, and community members to help it meet its goal. Tempe claims that the tree canopy will not only enhance community beautification and livability though encouraging outdoor activities but will also enhance property values, expand shade to maximize urban cooling, support biodiversity and wildlife habitat, and improve walkability for those who do not, or cannot, use automobile transportation. Many Eastern U.S. cities are also adopting tree canopy goals. Philadelphia recently launched a ten-year urban forest plan to increase the city’s tree canopy by 10% in ten years. The city plans to target areas in need of trees to reduce the urban heat island and mitigate the impact of climate change.

While citywide tree canopy goals are the most common local-level approach to promoting tree planting, they are not the only strategy. For example, several east coast states created a regional urban canopy goal. The Chesapeake Bay Program plans to increase the regional urban tree canopy by 2,400 acres by the year 2025. It is believed that the increased canopy will provide better air and water quality as well as habitat benefits throughout the region. Each state participating in the program has its own specific canopy goal to reach by 2025, and most member states plan to reach that goal through local municipality engagement.

2. Tree Giveaway Incentives

Some other cities have sought to promote urban forestry through tree giveaway programs that give citizens one or more free trees to plant on their own land. One recent study found that private land is often the most

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133. City of Tempe Urban Forestry Master Plan, CITY OF TEMPE 4 (2017), https://www.tempe.gov/home/showdocument?id=54581. The goal of becoming a “20 minute city” is so that residents can walk 20 minutes in the summer to any municipal hub without worrying about their health or the heat. Id.
134. Id. at 25.
135. Id. at 16–18.
136. See Frank Kummer, Philadelphia Launching 10-Year ‘Urban Forest’ Plan After Startling Tree Decline, PHILA. INQUIRER (Dec. 5, 2019), https://www.inquirer.com/science/climate/philadelphia-climate-change-forest-trees-canopy-heat-island-20191205.html (reporting that the city plans to increase the tree canopy from 20% to 30%).
137. See id. (explaining that the community forestry manager is targeting the vulnerable areas of the city that need trees to reduce local temperatures).
139. Id. at 3.
140. Id.
141. Id. at 6–12.
advantageous place to increase tree canopies, and some cities could increase tree canopies up to 30% by increasing urban forests on private land. For example, between 2011 and 2019, the City of Vancouver, Washington, increased its canopy by 18.6% just through encouraging planting in residential areas. Programs like this induce residents to enhance their surrounding by planting trees, thereby helping to address the externality problems associated with such actions. Residents are more likely to participate in tree giveaway programs when they receive trees for free. Their resulting participation ultimately benefits cities, and the world, through improved storm water runoff systems, increased shade, and greater carbon dioxide sequestration.

Tree giveaway programs have proven enormously successful in certain Californian communities. For instance, Riverside, California, uses a tree giveaway program to increase its tree canopy and encourage citizens to internalize the broad societal benefits trees provide. The city’s yearlong program also allows for Riverside Public Utility customers to purchase up to five pre-qualified trees and receive a $35 rebate per tree. In theory, citizens could receive five trees for free if they are $35 or less.

Other cities across the country have similarly succeeded in increasing their tree canopy through tree giveaway programs. Utilities in Colorado Springs, Colorado, partnered with the Arbor Day Foundation to provide free trees to the first 300 citizens that showed interest in participation. Unlike Riverside, California’s sweeping incentives, Colorado Springs’ incentives are limited to the first 300 people, and those participants may only retrieve a tree from a specified nursery. The Colorado Springs Utilities’ tree giveaway program is smaller than Riverside’s, offers fewer incentives, and has more hoops to jump through. Nevertheless, Colorado Springs’ tree

143. See City of Vancouver, Wash., supra note 142.
144. Id.
145. Telephone Interview with Christian Bennett, Assistant Civil Engineer II, City of Sacramento Dep’t of Water Res. Div. of Water Supply (Mar. 17, 2020) [hereinafter Interview with Christian Bennett].
147. Id. Additionally, between March 1 and June 30, customers can receive a free tree up to a $35 value if they bring their utility bill to participating retail stores. Id.
148. Arbor Day Foundation Tree Give Away, COLO. SPRINGS UTIL., https://www.csu.org/Pages/treegiveaway.aspx (last visited Mar. 1, 2020) (advising that citizens must follow the three steps listed online to receive their free tree from the nursery).
149. See id. (stating vouchers for the free tree must be used at Harding Nursery).
giveaway website stated that all available trees were claimed during the giveaway, which indicates that Colorado Springs boosted its tree canopy by 300 trees.\textsuperscript{150}

Some states use tree giveaway or rebate programs to encourage tree planting. For example, the State of Maryland provides citizens with a $25 coupon off the purchase of a native tree at participating nurseries across the state.\textsuperscript{151} This statewide approach is more inclusive than a city tree canopy goal because it allows all residents of the state to participate. To receive a tree in Maryland, residents simply need to print the online coupon then present it at a participating nursery.\textsuperscript{152} Maryland and participating nurseries split the cost of providing $25 off a tree. The state uses funding from violators of the Clean Air Act to value each coupon at $20.\textsuperscript{153} Then, the participating nurseries absorb the remaining $5.\textsuperscript{154} This collaboration is possible through the belief that planting trees will provide ecological, economic, and quality-of-life benefits to all citizens of the state.\textsuperscript{155}

Although state and local tree giveaway programs are a promising step forward in incentivizing increased urban forests on private land, educating participating residents about these programs and persuading them to properly participate remains a major challenge in many parts of the country.\textsuperscript{156} Participants often receive little education on tree maintenance after receiving their free trees.\textsuperscript{157} While most participants receive a pre-qualified “Right Tree, Right Place” tree, they seldom get user-friendly post-planting instructions regarding how to water, plant, or care for the tree.\textsuperscript{158} Trees planted through these programs that never reach maturity do not absorb CO\textsubscript{2}, provide ample shade, or produce other benefits. These trees become little more than a waste of effort and precious government dollars.

\begin{itemize}
\item \textsuperscript{150} See generally id. ("All trees have been claimed for 2021.").
\item \textsuperscript{151} Marylanders Plant Trees, MD. DEP’T NAT. RES., https://dnr.maryland.gov/forests/Pages/MarylandersPlantTrees/Introduction.aspx (last visited Nov. 12, 2020).
\item \textsuperscript{152} Id.
\item \textsuperscript{153} Id.
\item \textsuperscript{154} Id.
\item \textsuperscript{155} Id. Mentioned benefits include protection of air and water quality, reduction of energy costs, increased property values, and beautified neighborhoods and highways. Id.
\item \textsuperscript{156} See Vi D Nguyen et al., Branching Out to Residential Lands: Missions and Strategies of Five Tree Distribution Programs in the U.S., 22 URB. FORESTRY & URB. GREENING 24, 25 (2017) (explaining the challenges to tree planting programs).
\item \textsuperscript{157} See CITY OF RIVERSIDE PUB. UTILITIES, supra note 46 (omitting any additional form education or training on tree maintenance).
\item \textsuperscript{158} See ARBOR DAY FOUND., supra note 49 (inferring that a planter should consider that every tree species has specific needs for survival). Right Tree, Right Place trees have a better chance of survival for the area in which they are planted. Id.
\end{itemize}
3. Local Incentives to Preserve Existing Trees

Recognizing the importance and value of maintaining and preserving existing trees, some state and local governments have implemented policies aimed specifically at protecting urban trees that are already in the ground.\textsuperscript{159} For instance, Chicago, Illinois has adopted a detailed set of tree protection guidelines applicable in that city.\textsuperscript{160} Among other things, these guidelines seek to protect street trees by minimizing construction activities near them.\textsuperscript{161} Hawaii adopted a different approach, hosting local educational programs focused on improving the health and viability of trees in that state’s communities.\textsuperscript{162}

Chicago and Hawaii also take other steps to incentivize urban forest protection. Chicago adopted detailed guidelines to help promote citywide protection of street trees, in part because many street cleaning crews or construction builders carelessly operate around street trees.\textsuperscript{163} In the past, city workers often snapped nearby branches when working on power lines or accidentally swept the lower canopy away when cleaning streets.\textsuperscript{164} Tree guidelines deter these types of damage, providing better protection for street trees so that they are more likely to reach maturity. Moreover, Hawaii’s educational programs provide much-needed local instruction on forestation by addressing educational gaps that might otherwise limit effective tree giveaway programs. With proper education, local residents are more likely to actively and properly participate in urban forestation opportunities provided to them.\textsuperscript{165}

In recent decades, more cities have begun to recognize the need for specific rules to regulate tree urban maintenance.\textsuperscript{166} Without tree protection ordinances, it is difficult for cities to protect and maintain the existing trees needed for healthy and beautiful urban environments.\textsuperscript{167} Such ordinances provide specific protections for heritage and street trees and specify requirements for the replacement of dead, dying, or diseased trees.\textsuperscript{168}

\begin{flushleft}
\textsuperscript{159} See CITY OF TEMPE, supra note 133, at 25 (expressing need to educate citizens on forestry); See also COLO. SPRINGS UTIL., supra note 148 (providing a link for tips on tree planting and care).
\textsuperscript{161} Id.
\textsuperscript{163} CITY OF CHI. BUREAU OF FORESTRY, supra note 160.160
\textsuperscript{164} Id.
\textsuperscript{165} Interview with Christian Bennett, supra note 145.
\textsuperscript{167} See id. at 1 (specifying how the American Fork City Council wanted to promote maintenance to improve the “aesthetic quality, wildlife habitat, and appearance of the City”).
\textsuperscript{168} See, e.g., CITY OF SAN MATEO, CAL., MUN. CODE ch. 13.40 (2021).
\end{flushleft}
Unfortunately, many citizens have no knowledge of these ordinances or of how to find city rules regarding tree maintenance.\footnote{169}{Interview with Christian Bennett, supra note 145. 145}

A few cities even adopted detailed guidelines designed to educate citizens about pre-existing tree maintenance. As an example, the City of Falls Church, Virginia, produced a Tree Preservation and Replacement Guide for single-family residential homes.\footnote{170}{See Tree Preservation and Replacement Guide for Development and/or Redevelopment on Single Family Residential Lots, CITY OF FALLS CHURCH (2019), https://www.fallschurchva.gov/DocumentCenter/View/157/Urban-Forestry-Development-Guidelines?bidId=/ (showing checklists, graphs, and images for tree planting and preservation).} This guide provides residents with city guidelines, hand drawn depictions of how to care for existing trees on the lot, and replacement instructions for dead trees.\footnote{171}{Id.} The guidelines also include a detailed description of how to calculate tree canopy size and growth.\footnote{172}{Id. at 6–9.} Such guides can be valuable to the extent that they use pictures and accessible language that are far easier for average citizens to understand and follow.

\section*{C. Not Nearly Enough}

In summary, existing federal, state, and local policies are a noble start toward an effective set of tree planting policies in the U.S., but they do not do nearly enough to promote an optimal level of tree planting in this country. Existing federal tax incentives and Farm Bill programs are not strong or clear enough to incentivize widespread participation. State and local policies similarly fail to encourage broad participation or to adequately educate citizens on these issues. In light of these deficiencies, federal, state, and local governments must improve the promotion of reforestation in rural and urban settings and the many benefits those additional trees could provide.

\section*{III. STRENGTHENING FEDERAL AGROFORESTRY INCENTIVES}

Money may not grow on trees, but it can certainly promote tree planting. In light of this reality, there are multiple ways the federal government could majorly increase tree planting activity in rural settings. In particular, Congress could greatly increase agroforestry across the nation by enacting stronger, simpler, and more inclusive tax incentives. The federal government could also attach new tree planting requirements to Farm Bill loan programs.
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A. Legislating New Agroforestry Tax Credits

Congress could drive major increases in meaningful agroforestry across the U.S. by expanding tax per-tree incentive programs available to farms—large and small—that require educational classes and ongoing certification of tree preservation. There is particularly great opportunity for such agroforestry on small farms which, according to the USDA, comprise approximately 90% of U.S. farms and accounted for 49% of U.S. farmland in 2019.¹⁷³

1. Incentivizing Farms of All Sizes to Plant Trees

The most straightforward way to encourage more small farmers to voluntarily participate in agroforestry is to increase the size of financial incentives for those who participate. For instance, Congress could offer per-tree tax credits for the planting of qualifying trees and agreeing to continue to maintain them for a certain number of years into the future. If, under such an approach, a farmer planted 25 qualifying trees on his farm and was eligible to deduct $100 per tree from his federal tax liability, he would earn a $2,500 tax credit. Farmers would presumably opt to plant trees under such programs only to the extent they were able to avoid taking significant amounts of land out of production.¹⁷⁴ After the taxpayer claims its initial tax credit in the year the trees are planted, the farmer could potentially even receive smaller annual tax credits in subsequent years for maintaining the trees and completing a periodic recertification process.

Participants in per-tree tax credit programs should be required to complete educational sessions. USDA officials would lead these lessons instructing farmers on tree maintenance and spacing requirements, watering practices, and other related matters. Trees qualifying under these programs could even vary from region to region and could be selected based on their capacity to sequester large amounts of carbon dioxide upon reaching maturity in particular parts of the country. In short, adopting new per-tree tax credits would address many of the agroforestry tax incentive deficiencies by opening

¹⁷³. AMERICA’S DIVERSE FAMILY FARMS, supra note 99, at 4.
the door for small farms to participate and ensuring that participants have enough money and education to integrate trees.

**B. Adding Tree Requirements to Federal Farm Loan Programs**

A second potential federal policy strategy capable of increasing agroforestry would be to require all new Farm Bill loan applicants to participate in a reforestation program. One option is to offer such requirements in exchange for discounted interest rates. Another is to simply have mandatory requirements for all loan or loan guarantee recipients. Under such expanded programs, the FSA would likely be empowered to determine the required quantities and types of trees planted, which would surely vary across different regions of the country. In climates where tree planting benefits are very limited, loan applicants could perhaps alternatively agree to take on other prescribed climate change mitigation measures. Loan applicants could again be required to complete educational tree maintenance sessions from FSA or USDA officials describing such things as the potential benefits of best practices for strategies such as alley cropping, forest farming, riparian forest buffers, silvopasture, or windbreak trees.

**IV. IMPROVING URBAN FORESTRY POLICIES**

Because urban forests constitute some of the largest and most manageable forests in the nation, state and local urban forestry policies are also an important element of any comprehensive forestry policy strategy. Urban forestry is the science of managing trees and forest resources in urban communities to leverage the physiological, sociological, economic, climate change-fighting and aesthetic benefits that trees can provide.

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175. See NOWAK ET AL., supra note 142, at 10, 11 (positing better data collection may improve planned forestry).
176. See Brie Mazurek, 10 Ways Farmers Can Fight Climate Change, CULTIVATING HEATHY FOOD SYS. (Sept. 7, 2018), https://cuesa.org/article/10-ways-farmers-can-fight-climate-change. (listing a variety of ways farmers can help reduce climate change, such as carbon farming, drip irrigation, planting hedgerows, reducing livestock methane emissions, farming organic, and including renewable energy onsite such as wind turbines or solar panels).
177. See U.S. DEP’T AGRIC., supra note 91 (listing common practices in agroforestry).
178. See generally NOWAK ET AL., supra note 142 (discussing urban forestry in the United States).
A. State-Mandated Tree Canopy Goal Requirements for Cities

State governments should create statutes that mandate city-wide tree canopy goals to motivate municipal engagement in urban forestry. These goals, requiring cities to incrementally expand their tree canopies within prescribed time periods, would promote greater CO₂ absorption while also increasing the shading and beautification of urban areas. Of course, each municipality would be free to determine how best to increase its own tree canopy, whether through planting more public street trees, imposing new requirements on real estate developers, or persuading residents to plant trees on their own land. The following subsections explore each of these potential strategies.

1. Expanding Tree Planting Efforts on City-Owned Lands

The most direct and predictable way a city can increase its tree canopy is by simply planting more trees along streets, in public parks, and on other city-owned lands. Such publicly owned tree planting might be increased through new requirements for trees along newly built city streets, sidewalks, or in medians. Specific provisions in such ordinances should detail rules for planting, maintenance, and removal of trees within public rights-of-way.

Benefits of increased trees along roads include aesthetic benefits, potential increases in property values, more effective flood control, and decreases in storm water runoff and erosion. Street trees also help buffer urban noise for neighborhoods located directly next to busy streets and may forewarn drivers of upcoming turns. Officials in Tempe, Arizona, suggest that street trees may extend the life of sidewalks and asphalt in that sunny city while also helping to decrease urban heat island effects. The average annual cost of a street tree in the U.S. is only $18, which includes the costs of planting, pruning, permitting, and ultimate removal as necessary. In contrast, Tempe’s study concluded that an individual street tree may save the city around $100 or more in energy, carbon, air quality, storm water,
aesthetic, and other management costs, making it well worth the investment.

To further encourage urban forestry and to compensate cities for the myriad of positive externalities associated with urban trees, states should offer grants to cities for engaging in urban tree planting. California’s Urban Forestry Act, a state grant program administered through CAL FIRE, specifically funds urban forestry through such an approach. Among other things, grants under this program are targeted at socioeconomically disadvantaged cities and neighborhoods.

2. Expanding Tree-Related Permitting Requirements for Real Estate Development

Cities can also place some of the financial cost of increasing urban tree canopies on private real estate developers. Many cities have long employed this approach through ordinances requiring new parking lots built within the city to include a certain number of trees per parking space. For instance, the city of Athens, Georgia, requires that one tree be planted for every seven parking spaces. Specific provisions in these ordinances require that the trees must be evenly distributed and not planted farther than ten feet or closer than three feet from the edge of parking lots. To maximize CO₂ sequestration potential, cities can likewise impose restrictions related to the trees themselves, such as requirements that mature parking lot trees have a minimum canopy circumference of seven feet. Particularly in warmer climates, a permitted parking lot might also limit trees to certain species that are relatively tolerant of hot, dry conditions, have strong branch attachments, are resistant to attacks by pests, and are unlikely to leave vehicles covered with sticky residues.

Parking lot tree requirements already produce substantial benefits in a number of cities. For instance, a study conducted in Davis, California, determined that parking lot trees dramatically improved air quality and reduced parking lot temperatures by as much as 36°F, vehicle cabin...
temperatures by over 47°F, and fuel tank temperatures by nearly 7°F. Another Davis study found that parking lot trees even greatly reduced components of smog by preventing emissions from evaporating. A study conducted in Sacramento, California, estimated that annual benefits provided by that city’s existing parking lot tree requirements were valued at approximately $700,000 for improved air quality. The City predicted that increasing its parking tree shade from 8% to 50% would bump those annual benefits to $4 million.

Rather than simply mandating tree planting, cities can alternatively offer discounts on development impact fees to motivate real estate developers to plant trees or to plant more than the mandatory number. In many cities, development impact fees are imposed on new development projects. These fees usually fund the public improvements necessary to provide services to new homes, offices, stores, schools, and other uses. Offering discounts on these fees to developers who agree to plant and maintain more trees is a potentially powerful way to increase a city’s urban tree canopy, particularly in cities where there is significantly real estate development activity.

3. Residential Tree Planting Programs and Other Residential Incentives

Offering tree giveaway programs or other incentives for tree planting in residential areas is one other means of helping cities to achieve tree canopy goals. Promoting tree planting on private urban land has great potential to help cities toward those goals because such a high proportion of land in most cities is privately owned. Tree giveaway programs encourage residents to plant trees in their own yards by offering them free trees or rebates on pre-

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195. See generally McPherson et al., supra note 47, at 22.
196. CTR. FOR URBAN FOREST RES., supra note 194, at 3. 194
197. Id.
199. Burge, supra note 198, at 182.
qualified trees. Additional residential incentive strategies include offering reductions in water bills or stormwater fees for citizens who plant one or more trees, providing property tax breaks for trees on private land, and approvals of higher density development permits for residential developers who dedicate higher percentages of a project’s land to trees.

The potential benefits of increased tree planting in residential urban areas are numerous and go far beyond potential reductions in atmospheric carbon dioxide levels (which, one study estimated to be 0.1 pounds of carbon sequestration per square foot). As highlighted above, trees may also increase property values, aid stormwater drainage, and help decrease flooding in residential areas.

Cities that choose to offer property tax discounts for tree planting and maintenance might additionally find it worthwhile to adopt enforcement-related provisions to ensure that tax discount recipients properly maintain their trees. For example, one possible enforcement measure could be to require that the landowner allow a municipal arborist to visit participants’ homes once every five years to certify the number and type of trees on the residential lot.

Of course, residential tree planting programs may not be justifiable in all cities or climates. For instance, trees can sometimes interfere with rooftop solar panels, which require direct sunlight access to fully function. Similarly, some underprivileged communities may be less willing to participate, creating inequity issues.

One study suggested that lack of education, low socio-economic status, and

201. City of Vancouver, Wash, supra note 142; MD. DEP’T NAT. RES., supra note 151; CITY OF RIVERSIDE PUB. UTILITIES, supra note 146.
203. MOORE ET AL., supra note 202, at 15–16; Schultz & Durkay, supra note 19.
205. MCFHerson ET AL., supra note 47, at 19.
206. NOWAK ET AL., supra note 142, at 6, 7.
208. See NOWAK ET AL., supra note 142, at 11 (discussing water conscious vegetation efforts in low rainfall areas); see also Kim Rutledge et al, Xeriscaping, NAT’L GEOGRAPHIC RES. LIBRARY, ENCYCLOPEDIA ENTRY (last updated Jan. 21, 2011), https://www.nationalgeographic.org/encyclopedia/xeriscaping/ (defining the practice of xeriscaping as landscaping with minimal use of water and drought resistant native vegetation).
average household age were all significant detrimental factors for participation in planting programs. Many communities in the study that had low participation rates in such programs were primarily comprised of renters and had higher rates of criminal activity. In such communities, even greater financial investment may be needed to achieve robust levels of engagement.

Despite these potential challenges, there are numerous success stories of urban forestry in residential areas. For instance, New York City has already succeeded in planting one million trees. New York City’s tree giveaway program was the largest in the country. The city successfully provided 195,465 trees to residents and ultimately achieved its goals of increasing tree coverage in the city, improving air quality, providing more shade, and offsetting climate change.

B. Managing Large Increases in Urban Forestry Activities

The large increases in urban trees possible under some of the policy approaches just described would create new tasks for cities, most of which are manageable through education and careful planning. Urban forestry master plans are one way for cities to coordinate these new tree management efforts while also creating jobs, clarifying maintenance requirements, and providing educational opportunities for local residents.

1. Hiring More City Arborists

Cities can help residents maintain trees by adding specific new city employee positions for individuals focused on tree maintenance. Many cities already employ one or more “arborists,” who care for city trees. Adding arborists is a valuable way for cities to ensure they are maintaining city tree health, holding developers to their tree-related development requirements.

210. Id. at 74–75.
211. Id. at 75.
212. Id. at 75; see also Elgin Tucker, Economic Status and Its Influence on Tree Planting in Urban Areas, YALE ENV’T REV. (Aug. 25, 2014), https://environment-review.yale.edu/economic-status-and-its-influence-tree-planting-urban-areas-0 (discussing results of the U.S. Forest Service’s study in Portland, Oregon determining influential factors of citizen participation in a city-wide tree planting program).
213. Mayor de Blasio Celebrates One Millionth Tree with Former Mayor Michael Bloomberg, Bette Midler, Volunteers, and Community Members, NYC.GOV (Nov. 20, 2015) (noting the City partnered with a private company, New York Restoration Project, to meet this large goal).
215. Id.
and otherwise supporting tree planting and conservation efforts within the city.

Funding for new arborist positions could justifiably come from multiple revenue sources, including water and sewer funds and city general funds. The use of water and sewer funds for these positions is sensible because tree roots can potentially impact water and sewer lines and trees can benefit storm water drainage systems.\textsuperscript{217} Funding arborist salaries through general city funds is also arguably justifiable given the broader citywide benefits of trees highlighted above.\textsuperscript{218}

## 2. Expanding Tree Maintenance Requirements

With the help of arborists, cities should also impose and enforce ordinances designed to ensure that tree planting and maintenance activities within their boundaries are sensible and appropriate. “Right Tree, Right Place” requirements must be followed to build any successful urban tree canopy.\textsuperscript{219} And since every city has unique geological features that restrict or promote tree growth, arborists’ input is needed to ensure that decisions are appropriate given the specific soil types, weather, and other unique environmental factors in any given community.\textsuperscript{220}

Cities and their residents must also consider water and sewer line locations when planting trees.\textsuperscript{221} Tree roots grow down into the ground, which is where most, if not all, water and sewer lines are located.\textsuperscript{222} Trees on streets, in parking lots, and in residential areas may damage water and sewer lines.\textsuperscript{223} To avoid tree-root damage, city arborists should either provide a pamphlet to companies or hold educational workshops to help workers navigate the planting requirements.

Urban tree canopies can create challenges for electric utilities as well.\textsuperscript{224} Many power line companies are responsible for maintaining surrounding

\begin{itemize}
  \item \textsuperscript{218} See generally \textit{An Introduction to City Finances, City of Portland Budget Off.}, \texttt{https://www.portlandoregon.gov/cbo/article/18178#_Toc44398653} (last visited Nov. 13, 2020) (summarizing the finance structure based on source and use of funds in Portland, Oregon).
  \item \textsuperscript{219} Arbor Day Found., supra note 49.
  \item \textsuperscript{220} Id.
  \item \textsuperscript{221} See, e.g., \textit{Lancaster, Pa., Code} §§ 260-301, \texttt{https://www.ecode360.com/30007662} (demonstrating a city ordinance that requires a tree planting plan).
  \item \textsuperscript{222} \textit{City of Riverside}, supra note 217, at 29–30; \textit{Cf. William Most & Steven Weissman, Berkeley Law Ctr. For Law, Energy & the Env’t, Trees and Power Lines: Minimizing Conflicts Between Electric Power Infrastructure and the Urban Forest 7–14} (2012) (discussing similar concerns with underground power lines and trees).
  \item \textsuperscript{223} \textit{City of Riverside}, supra note 217, at 29–30.
  \item \textsuperscript{224} \textit{City of Riverside}, supra note 217, at 30–33.
\end{itemize}
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trees to prevent power line damage and potential fires. However, cities should also still be aware of the potential hazards that overall increase of tree canopy can pose and take those issues into account in their planning. Many cities provide online guidelines for city tree maintenance to help mitigate such challenges. For example, the City of Bellevue, Washington, delineates the city’s responsibilities versus residents’ responsibilities for tree maintenance and provides information regarding how to sustainably water and prune city trees.

3. Expanding Educational Programs

Lastly, residents participating in tree giveaway programs offered by a city must have access to accurate information on how to keep new trees alive for such programs to ultimately be successful. Tree maintenance and proper watering is essential to tree survival and canopy growth. Some cities provide online pamphlets that describe planting and maintenance requirements. However, not all residents participating in tree giveaway programs have access to online information. Accordingly, informational pamphlets outlining proper tree maintenance and “help line” telephone numbers staffed by city arborists are crucial to promoting proper tree maintenance after planting the giveaway trees. Arborists can additionally host regular educational and training programs for participating citizens to review maintenance requirements and provide venues for residents to easily ask questions. Ideally, cities would specifically assign arborist services to underprivileged communities to further engage citizens in those communities.


227. See generally CITY OF RIVERSIDE, supra note 217, at 7 (explaining that trees are a valuable resource that must be maintained).


229. Kathryn Zickuhr & Aaron Smith, Digital Differences, PEW RESEARCH CTR (April 13, 2012), https://www.pewresearch.org/internet/2012/04/13/digital-differences/ (explaining internet use remains strongly correlated with age, education, and household income). Individuals are unlikely to have access to the internet if their household income is below $20,000 a year and residents who are above a certain age are unlikely to want to use the internet for finding information. Id.; but see Camille Ryan & Jamie Lewis, Computer and Internet Use in the United States: 2015, AMERICAN CMTY. SURV. REP. 2 (2017), https://www.census.gov/content/dam/Census/library/publications/2017/acs/acs-37.pdf (finding that 78% of American households had computer and that 77% of households had access to broadband internet).
and to address environmental injustice issues.\textsuperscript{230} Although very few such post-tree giveaway educational programs exist, many municipalities do reach out to participating residents to check on planted trees.\textsuperscript{231} Most programs also have post-delivery communication in the form of online surveys, check-up emails, and in-person observations.\textsuperscript{232} These surveys and check-ins include questions regarding the tree giveaway process, whether residents watered their tree, and the current health of newly planted trees.\textsuperscript{233} Collectively, efforts like these can help to ensure that residents have the information necessary to help their new trees grow and become valuable fixtures on their land and in their communities.

CONCLUSION

Increased tree planting is necessary to ebb the continual rise of global atmospheric CO\textsubscript{2} concentrations. Although the carbon-reducing power of trees is common knowledge, existing policies in the U.S. fail to encourage tree planting at a pace capable of meaningfully reducing CO\textsubscript{2} levels. The policies fall short in promoting tree planting and conservation throughout the country, from small rural farms to urban settings in the nation’s largest cities.

In light of these challenges and President Trump’s announcement initiating the U.S.’s participation in the Trillion Trees project, there is a need for new federal state and local policies to more aggressively encourage tree planting. Market failures resulting from tree-related externalities have long prevented citizens and businesses from adequately engaging in forestation activities. Congress should address these challenges through a new tax credit program and expanded loan guarantee program provisions designed to incentivize more tree planting on the nation’s agricultural lands. Local governments should also assist in this effort by adopting tree canopy goals, imposing additional tree-related requirements on real estate developers, and adopting or expanding tree giveaway programs. If adopted, such innovations in the nation’s reforestation policies would significantly reduce America’s contribution to global warming and simultaneously beautify cities and farms throughout the country.

\begin{footnotesize}
\begin{enumerate}
\item[230.] Donovan & Mills, supra note 209, at 75.
\item[231.] Nguyen et al., supra note 156, at 30.
\item[232.] Id.
\item[233.] Id.
\end{enumerate}
\end{footnotesize}
ENVIRONMENTAL CONSTITUTIONALISM: MARRYING THE DUE PROCESS CLAUSE AND THE EQUAL PROTECTION CLAUSE WITH CLIMATE CHANGE

Terry Ann Campbell

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INTRODUCTION

The environment is man’s first right. Without a clean environment, man cannot exist to claim other rights, be they political, social, or economic.

- Ken Saro-Wiwa

Do the Fifth and Fourteenth Amendments provide citizens a private right of action to sue the United States (“U.S.”) for not protecting them against the adverse effects of climate change? The short answer is yes. Legal scholars at the Environmental Law Institute (“ELI”) believe that “the text and history of the Constitution, as interpreted by courts and understood by most Americans, provide a firm legal basis for comprehensive, effective environmental protections.” It is on this premise that this Note argues that the Fifth and Fourteenth Amendments provide a firm legal basis for effective protections against climate change. The Fifth and Fourteenth Amendments list fundamental rights like the right to life, liberty, and property; fundamental rights also include unenumerated rights like the right to privacy and the right to marry. Articles II and VI of the U.S. Constitution compel the President and other officials—like judges and members of Congress—to uphold the


2. U.S. CONST. amend. V. (“No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a grand jury, except in cases arising in the land or naval forces, or in the militia, when in actual service in time of war or public danger; nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.”); U.S. CONST. amend. XIV § 1 (“All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the state wherein they reside. No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.”).


5. Id.
Constitution. It is no wonder that young climate activists like Greta Thunberg agree it is imperative that world leaders care about “collapsing ecosystems, mass extinctions and people suffering due to climate change,” instead of “caring more about money” and “fairy tales of eternal economic growth.” Greta’s 2019 Climate Strike message echoes back to 2016, when a group of young climate activists brought an unprecedented suit in U.S. courts, arguing that the Government must act with visible urgency to reduce CO2 emissions. These young activists argued that the U.S. President and executive agencies deliberately allowed pollution and climate change on a catastrophic level.

While the cynics may cry foul, the language of the U.S. Constitution is clear. Because the Government is mandated to uphold the Constitution, the courts and Congress must do everything in their power to enforce it. The plaintiffs’ claims in Juliana are a simple revindication of these constitutional rights that government officials have sworn to protect. Conversely, Juliana has been called the “trial of the century” because, unlike other cases that have brought climate change claims, it is the first case in U.S. history to have withstood constitutional muster amidst claims of Due Process and Equal Protection violations. Even though Juliana was dismissed by the Ninth Circuit in January 2020, this case still symbolizes a significant victory for Greta Thunberg and for other climate activists in the U.S. and around the world. The fact that the courts can no longer deny that climate change is real is impactful for future environmental suits. Moreover, the substantive due process and equal protection claims set forth in Juliana have arguably taken the spotlight and have put the world on notice of bigger things to come for the advocates of environmental fundamental rights.

This Note argues for a U.S. framework on environmental constitutionalism to address the urgency of climate change. “Global

6 U.S. Const. art. II, § 1; U.S. Const. art. VI.
9 Id.
10 Id.
12 Juliana v. United States (Juliana III), 947 F.3d 1159 (9th Cir. 2020).
14 See generally JAMES R. MAY AND ERIN DALY, GLOBAL ENVIRONMENTAL CONSTITUTIONALISM (Cambridge Univ. Press 2015) (discussing the Constitutionalization of
environmental constitutionalism is a relatively recent phenomenon at the confluence of constitutional law, international law, human rights, and environmental law.”  

Over the past 50 years, environmental constitutionalism has provided “new causes of action and stretched environmental rights into new forms.” Countries all around the world have proven that constitutional texts effectively address environmental violations, including climate change. All around the world, countries have already implemented the practice of environmental constitutionalism as a global solution to a global problem. It is high time that the federal government here does the same. This Note takes the due process claims made in Juliana even further to argue that through application, the Fifth and Fourteenth Amendments already provide protection against the effects of climate change. The Ninth Circuit erroneously dismissed Juliana III because the relief that the climate activists sought is inherent and implied in the language of the Fifth and Fourteenth Amendments. To date, the young climate activists have submitted their en banc appeal and for just cause, because the time is ripe for the claims made in Juliana to become the norm in climate change litigation instead of the exception.

The language of the Equal Protection Clause of the Fourteenth Amendment supports the idea that unenumerated environmental protections must be recognized as fundamental rights because they are basic human rights. Finally, this Note addresses the critics of this constitutional approach and offers workable solutions to appease the cynicism of those left yet unconvinced. The goal of this Note is to prove that the Fifth and Fourteenth Amendments provide a firm legal basis for effective protections against climate change.

environmental norms witnessed in the last two decades and represent a significant but under-developed trend. Authors provide a critical examination of the usefulness of constitutional environmental provisions); see infra Section III.

15. ELGAR ENCYCL. OF ENV’T L., HUMAN RIGHTS AND THE ENVIRONMENT: LEGALITY, INDIVISIBILITY, DIGNITY AND GEOGRAPHY at 93 (James R May & Erin Daly eds., Elgar 2019) (probing key elements of environmental law that could model the International Covenants on Human Rights).

16. Id. at 94; see also Murray, supra note 11 (explaining how new constitutional rights came to be recognized).

17. ELGAR ENCYCL. OF ENV’T L., supra note 15 at 95–96.

18. Id. at 94.

19. See Juliana III, 947 F.3d at 1165 (discussing the 9th circuit’s decision to dismiss the case).

I. BACKGROUND

First, to better understand this Note’s premise, it is important to clarify a few terms essential to the subject matter. Second, this section will demonstrate that combating climate change means acknowledging that climate change is a global issue with far reaching effects. Third, any violation of the Fifth and Fourteenth Amendments is contrary to the rule of law because climate change requires the judicial protection of the unenumerated rights rooted in the Bill of Rights. Fourth, by way of the Constitution, the U.S. Government has an obligation to protect its populations against climate change. Finally, by dismissing the Juliana case, the U.S. Government has failed to uphold the Fifth and Fourteenth Amendments.

Human rights are fundamental rights in the U.S. context. Human rights are the “freedoms, immunities, and benefits that, according to modern values (especially at an international level), all human beings should be able to claim as a matter of right in the society in which they live.” Similarly, a fundamental right is a “right derived from natural or fundamental law.” It is a significant component of liberty,” to which encroachments “are rigorously tested by courts to ascertain the soundness of purported governmental justifications.” According to Professor Erwin Chemerinsky, specialist in constitutional law, Jesse H. Choper distinguished Professor of Law, and Dean at Berkeley Law: “some liberties are so important that they are deemed ‘fundamental rights’ and that generally, the Government cannot infringe upon them unless strict scrutiny is met.” In the U.S., a “fundamental right triggers strict scrutiny to determine whether the law violates the Due Process Clause or the Equal Protection Clause of the 14th Amendment.”

24. Id.
26. BLACK’S LAW DICTIONARY, supra note 23.
A. The U.S. is Yet to Recognize That Climate Change is a Global Issue That has Nefarious Effects on Human and Civil Rights

Climate change, though complex, is perhaps the most important environmental challenge of the day, so governmental inaction is a far cry from what climate activists expect of their governments in this impending era.\textsuperscript{27} Countless research shows that the major cause of climate change seems to be “anthropogenic greenhouse gas (“GHG”) emissions from the use of fossil fuels.”\textsuperscript{28} The main issue with climate change is that it carries with it a “serious risk of major, irreversible change.”\textsuperscript{29} Concrete evidence of climate change includes “ice sheet disintegration; regional climate disruptions . . . increasing storm intensity in the Americas . . . warming polar regions . . . and more extreme weather events including droughts, floods, and fires.”\textsuperscript{30} The U.S. Supreme Court has even acknowledged that “[t]he harms associated with climate change are serious and well recognized.”\textsuperscript{31}

Over the past 50 years or so, environmental constitutionalism experts have advocated tirelessly for basic human rights to be at the center of climate change protections, because climate change poses a serious threat to human existence.\textsuperscript{32} Despite scientific evidence, efforts by the U.S. Government to incorporate human and civil rights protections to combat climate change have been slow.\textsuperscript{33} These efforts are important because addressing climate change requires “concerted and coordinated global efforts adjunct to mitigation, adaptation and compensation.”\textsuperscript{34} For example, many people are currently forced to migrate away from areas vulnerable to rising sea levels, hurricanes, and ravaging forest fires.\textsuperscript{35} Rising sea levels encroach on coastlines, destroy habitats, and inundate communities.\textsuperscript{36} Changes in precipitation and temperature destroy agricultural systems, fisheries, water supplies, forests, and other “natural habitats upon which many people depend for their sustenance and livelihoods.”\textsuperscript{37}

\begin{thebibliography}{9}
\bibitem{27} See \textit{UNITED NATIONS ENV'T}, supra note 1 (stating that although some governments are taking action, it is not yet enough to address the pressing issue of climate change).
\bibitem{29} \textit{Id.}
\bibitem{30} \textit{MAY \& DALY} supra note 14, at 269.
\bibitem{31} \textit{Massachusetts v. EPA}, 549 U.S. 497, 521 (2007).
\bibitem{32} \textit{ELGAR ENCYCL. OF ENV'T L.}, supra note 15, at 101, 198.
\bibitem{34} \textit{MAY \& DALY}, supra note 14, at 270, 272.
\bibitem{35} \textit{Id.} at 269; Kamarck, supra note 33.
\bibitem{36} \textit{MAY \& DALY}, supra note 14, at 270.
\bibitem{37} \textit{Id.}
\end{thebibliography}
The issue of basic human rights certainly came to the fore during the *Juliana III* ruling.\textsuperscript{38} The Ninth Circuit conceded that the effects of climate change seem undeniably irreversible and catastrophic to the general population.\textsuperscript{39} The majority opinion openly admitted that “copious expert evidence established that the unprecedented rise in atmospheric carbon dioxide levels stemmed from fossil fuel combustion and will wreak havoc on the Earth’s climate if unchecked.”\textsuperscript{40} In a dissenting opinion almost as long as the majority opinion, Judge Staton zealously made the case that the young plaintiffs have a “constitutional right to be free from irreversible and catastrophic climate change.”\textsuperscript{41} Judge Staton made it unequivocally clear that she would not have dismissed the case because it has been long held that the court’s role is to rule on constitutional issues.\textsuperscript{42} To prove her point, Judge Staton quoted *Obergefell v. Hodges*: “when fundamental rights are at stake, individuals ‘need not await legislative action.’”\textsuperscript{43} Judge Staton further supports the idea that the Government has more than just a moral responsibility to preserve the Union by protecting individuals from the effects of climate change.\textsuperscript{44} Although the court dismissed the *Juliana* case, all is not lost. It is now more than ever up to climate activists and stakeholders to press the U.S. Government to recognize that protection against climate change is an inherent and implied right enforceable under the Fifth and Fourteenth Amendments.\textsuperscript{45} The impetus is on the U.S. Government to begin implementing policies, procedure and legislation to reverse the effects of climate change and protect its populations from threats of extinction.\textsuperscript{46}

B. Violating the Fifth and Fourteenth Amendments is Contrary to the Rule of Law

Since the 19th century, fundamental rights have been an interwoven bedrock principle of U.S. jurisprudence.\textsuperscript{47} For the purposes of this Note, the rule of law is a durable system of laws, institutions, and community

\textsuperscript{39} *Juliana III*, 947 F.3d at 1182.
\textsuperscript{40} *Id.* at 1166.
\textsuperscript{41} *Id.* at 1182.
\textsuperscript{42} *Id.* at 1191.
\textsuperscript{43} *Id.* at 1180.
\textsuperscript{44} *Id.* at 1177.
\textsuperscript{45} See MAY & DALY, supra note 14, at 202 (describing international cases that found a fundamental right to a healthy environment).
\textsuperscript{46} See Denise Chow, *Three Islands Disappeared in the Past Year: Is Climate Change to Blame?* June 9, 209, NBCNEWS (June 9, 2019), https://www.nbcnews.com/mach/science/three-islands-disappeared-past-year-climate-change-blame-ncna1015316 (stating that “governments should pay attention to the islands in the western Pacific and make their own coastal communities more resilient”).
commitment that delivers four universal principles: (1) accountability; (2) just laws; (3) open government; (4) accessible and impartial dispute resolution.\textsuperscript{48} In \textit{Griswold v. Connecticut}, the Court defined fundamental rights as “[s]pecific guarantees in the Bill of Rights have penumbras, formed by emanations from those guarantees that help give them life and substance.” \textsuperscript{49} In other words, “[v]arious guarantees create zones of privacy.”\textsuperscript{50} Like the right to privacy, the right to a healthy environment “enables the citizen to create a zone of privacy which government may not force him to surrender to his detriment.”\textsuperscript{51} Likewise, embedded in the Ninth Amendment is the principle that “the enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people.”\textsuperscript{52} Protection against climate change in U.S. jurisprudence is anchored on the idea that certain fundamental freedoms permeate from these penumbras and emanations not to be trampled on by governmental action.\textsuperscript{53}

Judge Staton equally highlighted in her dissent that the “Supreme Court has recognized that the Due Process Clause, enshrined in the Fifth and Fourteenth Amendments, also safeguards certain ‘interests of the person so fundamental that the [government] must accord them its respect.’”\textsuperscript{54} It is also true that the Constitution protects the right to life, liberty, and property as it protects free speech, freedom of the press, and freedom of worship and assembly.\textsuperscript{55} Judge Staton’s dissent echoes the Supreme Court’s ruling in \textit{Griswold} that “[t]he language and history of the Ninth Amendment reveal that the Framers of the Constitution believed that there are additional fundamental rights, protected from governmental infringement, which exist alongside those fundamental rights specifically mentioned in the first eight constitutional amendment.”\textsuperscript{56}

The ruling in \textit{Griswold} reiterates the point that fundamental rights can only be protected if the rule of law prevails.\textsuperscript{57} Since the rule of law is a bedrock principle of U.S. jurisprudence, the U.S. Government is obligated to uphold fundamental freedoms, which include environmental protections against climate change.

\textsuperscript{48} \textsc{World Justice Project, What is the Rule Of Law?}, https://worldjusticeproject.org/about-us/overview/what-rule-law (last visited May 19, 2021).
\textsuperscript{50} \textit{Id}.
\textsuperscript{51} \textit{Id}.
\textsuperscript{52} \textit{Id}.
\textsuperscript{53} Hope M. Babcock, \textit{The Federal Government Has an Implied Moral Constitutional Duty to Protect Individuals from Harm Due to Climate Change: Throwing Spaghetti Against the Wall to See What Sticks}, 45 \textit{Ecology L. Q.} 735, 742 (2019).
\textsuperscript{54} \textit{Juliana III}, 947 F.3d at 1177.
\textsuperscript{55} \textit{Id} at 1179.
\textsuperscript{56} \textit{Griswold}, 381 U.S. at 488.
\textsuperscript{57} \textit{Id} at 485.
C. Climate Change Imposes an Obligation to Protect Fundamental Rights

The U.S. Constitution imposes an obligation on the U.S. Government to protect the individuals within its borders against factors like climate change.58 This obligation stems from the same idea that certain rights are inherent and implied, such as the right to live in a healthy environment.59 With regard to environmental protections, the Fifth and Fourteenth Amendments convey four basic responsibilities upon the government: (1) controlling greenhouse gas emissions; (2) promoting adaptation to climate change; (3) cooperating in international negotiations; and (4) providing support to developing countries that are most harmed by and least responsible for climate change.60 One could interpret the Fifth and Fourteenth Amendments to convey these responsibilities because U.S. jurisprudence requires constitutional protections of fundamental rights.61 Therefore, the U.S. Government, as well as private actors, must respect substantive and procedural rights to safeguard against human rights violations. The plain language of the Fifth and Fourteenth Amendments already provide a firm legal basis for effective protections against climate change.

D. The Juliana III Ruling Proves That the U.S. Government Continues to Violate the Fifth and Fourteenth Amendments Because It Failed to Protect Its Population from the Nefarious Effects of Climate Change

The background to Juliana remains a significant victory for advocates in favor of applying the text of the Constitution to environmental protections, and for those in favor of judicial engagement in the fight against climate change.62 According to advocates for the Atmospheric Trust Litigation approach, like Professor Christina Wood, this is a strategy which “calls upon the judicial branches of governments to force carbon reduction on the basis of their fiduciary responsibility to protect the public trust.” 63 The Atmospheric Trust Litigation movement came about because “there has been little action at either the international or national level” to address the climate

60. ELGAR ENCYCL. OF ENV’T L., supra note 15.
61. See Pierce v. Soc’y of Sisters, 268 U.S. 510, 535 (1925) (ruling that fundamental rights are protected by the Fifth and Fourteenth amendments).
62. Infra Section III.
change crisis. Proponents like Professor Wood argue that “exclusive reliance on the political branches for climate response now seems ill-advised.” Proponents of the Atmospheric Trust Litigation aim to shape public opinion and turn the court system into a “sustained front in the war over climate change.”

In response to the 2016 filing of Juliana, a wave of lawsuits—numbering more than 80—with climate-related claims entered the courts in 2018 alone. Arguably, Juliana earned its name as the “trial of the century” because of the public attention it garnered when a group known as “youth plaintiffs”—aged at the time from 10 to 19—joined forces with the Earth Guardians Group. Along with guardian Dr. James Hanson, the youth plaintiffs filed claims against the U.S. government for its refusal to implement measures that combat the effects of climate change despite knowing about its effects for 50 years. Unlike many climate lawsuits grounded in statutes like the Clean Air Act, Juliana puts forward a sweeping argument that the U.S. Government’s “failure to prevent the present and looming climate crisis constitutes a breach in the government’s basic duty of care to protect plaintiffs’ fundamental constitutional rights.”

Plaintiffs allege that the U.S. Government violated their rights to “life, liberty, and property; equal protection;” as well as their “rights as beneficiaries of the federal public trust.” The Juliana plaintiffs are correct in their assertions because these said rights are recognized by the Constitution; thus indicating that plaintiffs should be free from government actions that harm life, liberty, and property. According to the youth plaintiffs, the government has a contractual duty to protect its citizens. Furthermore, it has been long accepted that inherent and inalienable rights evolve; thus demanding the Government to reassert its duties in protecting future generations.

In Juliana II, plaintiffs sought injunctive and declaratory relief, asserting that there is “an extremely limited amount of time to preserve a habitable climate system for our country” before “the warming of our nation will

64. Murray, supra note 11.
65. Id.
66. Id.
67. Id.
68. Id.
70. OUR CHILDREN’S TR., supra note 69; Murray, supra note 11.
72. Infra Section II.
73. First Am. Compl. at 98.
74. Id. at 278.
become locked in or rendered increasingly severe. However, the U.S. has rebutted the plaintiffs’ case by submitting several motions for dismissal. In the last motions filed, the U.S. contended that:

(1) there are no genuine issues of material fact; (2) plaintiffs lack Article III standing to sue; (3) plaintiffs have failed to assert a valid cause of action under the APA; (4) plaintiffs’ claims violate separation of powers principles; (5) plaintiffs have no due process right to a climate system capable of sustaining human life; and (6) the federal government has no obligations under the public trust doctrine.

At the time, the District Court held that the plaintiffs had standing and there had been a genuine dispute of material fact. The court reasoned that although the U.S. was aware of the “effects of fossil fuel emissions on atmospheric concentrations of CO2,” its awareness did not cause the plaintiffs’ injury.

However, upon appeal to the Ninth Circuit, the Ninth Circuit reversed the District Court’s decision and ruled instead that Juliana did not have Article III standing because the plaintiffs failed to show that their claims could be redressed at the judicial level. The majority opinion differentiated Juliana from Massachusetts v. EPA, because unlike Massachusetts, the claimants in Juliana claimed substantive rights that the court regrettably could not allow them to assert without meeting all the normal standards of redressability. The Ninth Circuit also asserted that Juliana raised a political question that was beyond the scope of the judiciary. However, this Note, like Judge Staton, refutes the Ninth Circuit’s ruling as erroneous because, as Chief Justice Marshall aptly stated many years ago, “It is emphatically the province and duty of the judicial department to say what the law is.” Judge Staton hammered home the point that she would not have dismissed the case because the evidence showed that the young plaintiffs suffered an injury that the court could redress. According to Justice Staton, “there are many constitutional doctrines that are not spelled out in the Constitution but are

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75. Id. at 10.
76. YOUTH V. GOV., supra note 20.
77. See Juliana II, 339 F. Supp. 3d at 1073 (discussing what the Defendant’s sought in their motion for summary judgment).
79. First Am. Compl. at 133.
80. Juliana III, 947 F.3d at 1175.
81. Id. at 1168.
82. Id. at 1187.
nonetheless enforceable as historically rooted principles embedded in the text and structure of the Constitution.”

This Note’s analysis is supported by Judge Staton’s reasoning that:

Plaintiffs bring suit to enforce the most basic structural principle embedded in our system of ordered liberty: that the Constitution does not condone the Nation's willful destruction. So viewed, plaintiffs' claims adhere to a judicially administrable standard. And considering plaintiffs seek no less than to forestall the Nation's demise, even a partial and temporary reprieve would constitute meaningful redress. Such relief, much like the desegregation orders and statewide prison injunctions the Supreme Court has sanctioned, would vindicate plaintiffs' constitutional rights without exceeding the Judiciary's province.

Judge Staton further went on to highlight that the “Supreme Court was explicitly unconcerned with the fact that crafting relief would require individualized review of thousands of state and local policies that facilitated segregation. Rather, a unanimous Court held that the judiciary could work to dissemble segregation over time while remaining cognizant of the many public interests at stake.”

Like the vehement dissent of Judge Staton, this Note contends that the Ninth Circuit’s ruling was erroneous because, the judiciary has a duty to interpret the law. Additionally, the language of the Due Process and Equal Protection Clauses confirms procedural as well as substantive remedies for cases like Juliana in the struggle to save planet Earth. The current ruling has further set back the tireless efforts of climate activists and the Juliana lawyers will have to now work on appealing the case as they remain hopeful that the en banc Ninth Circuit will rule in their favor. This Note is therefore timely and will articulate in the next section the importance of upholding the Fifth and Fourteenth Amendments to protect against climate change.

II. ANALYSIS

U.S. courts have long established that fundamental rights tied to life, liberty, and property include even those not enumerated in the Due Process and Equal Protection Clauses. Courts across the country should well-

84. Juliana III, 947 F.3d at 1179.
85. Id. at 1175.
86. Id. at 1188.
87. See Chemerinsky, supra note 25, at 1173 (holding that fundamental rights are those that are deeply embedded in the Nation’s traditions).
receive the idea that humans have an implicit right to life in a healthy environment. Plaintiffs posited this argument since predictions about climate change indicate that failure to act will lead to ultimate extinction, as clean air is necessary for humans to survive. However, this is not presently the case. Unlike the Juliana example, courts must recognize the right to a healthy environment and apply it to the Fifth and Fourteenth Amendments. The right to a healthy environment is a fundamental right because it is tied to life, liberty, and property. This Note will analyze the idea of life, liberty, and property in support of the premise that environmental protections should be treated as fundamental rights under the Constitution. Next, this Note will demonstrate how the constitutional protection against climate change is embedded in the unenumerated rights of the Fifth and Fourteenth Amendments.

A. No State Shall Deprive Any Person of Life, Liberty, or Property, Without Due Process of Law and No Person Shall Be Deprived of Life, Liberty, or Property Without Due Process of Law

The climate activists in Juliana argue that the Government’s failure to act on climate change constitutes a “deprivation of life” and many legal scholars agree. According to Ylan Nguyen’s article, Constitutional Protection for Future Generations from Climate Change, “[t]he right to a secure climate system is critical to future generations’ fundamental rights of life . . . ”. Nguyen argues that “the Constitution's preamble describes a broad intergenerational goal to ‘secure the blessings of liberty to ourselves and our Posterity . . .’” Many rights like “abortion, the right to marry, the right to use contraceptives, among many others,” already fall under the constitutional protection of the Fifth Amendment. It is therefore reasonable to deduce that protection from climate change implies a right to life.

88. See First Am. Compl. at 88 (discussing how a Louisiana resident will not enjoy the beaches of the Gulf of Mexico forever, as a result of the country’s lack of unified fight against climate change).
89. Sumudu Atapattu, The Right to a Healthy Life or the Right to Die Polluted?: The Emergence of a Human Right to a Healthy Environment Under International Law, 16 TULANE ENV’T L. J. 65, 69 (2002) (discussing the right to a healthy environment as a fundamental right).
91. Id.
92. Id.
Moreover, Professor Chemerinsky states that “liberty” includes those rights that are “expressly stated in the text, such as free exercise of religion, and rights that are not enumerated, such as the right to marry.”93 The right to a healthy environment should be included as one of those non-enumerated rights. Freedom from the effects of climate change is a personal right, just like the one established in Loving v. Virginia where the Supreme Court held that “the freedom to marry is one of the vital personal rights protected by the Due Process Clause of the Fourteenth Amendment as essential to the orderly pursuit of happiness by free men.”94

The Supreme Court further reinforced the concept of individual autonomy in Obergefell v. Hodges where the right to marry was considered a fundamental right.95 In Obergefell, same-sex couples sued various states for violating both the Due Process and Equal Protection Clauses because these states upheld statutes that prevented same-sex marriages.96 In his majority opinion, Justice Kennedy ruled that “the right to marry is a fundamental right inherent in the liberty of the person, and under the due process and equal protection clauses of the Fourteenth Amendment, couples of the same-sex may not be deprived of that right and that liberty.”97 Justice Kennedy affirmed that “Same-sex couples may exercise the fundamental right to marry,” and because this was a fundamental right, the Constitution prohibited that this “liberty be denied to them.”98 Following the standard set in Obergefell, the Government’s reluctance to protect future generations from the adverse effects of climate change is a violation of their due process and equal protection rights. The right to live in a healthy environment can be analogous to the inherent rights established in Loving and Obergefell because these are rights that are tied to life, liberty, and property. Climate change threatens these basic constitutional rights; therefore, courts must begin to enforce the Fifth and Fourteenth Amendments as a firm legal basis for effective protections against climate change.

The Juliana litigants also claim that the Government deprived them of property.99 Professor Chemerinsky defines a property right as a “crucial

93. Chemerinsky, supra note 25, at 837.
96. Id. at 654–55.
97. Id. at 675.
98. Id.
significance in a person’s life.” One also has a claim of deprivation of property in cases where “the law creates a justifiable expectation that the benefit will be received in the future.” Goldberg v. Kelly clearly illustrated that plaintiffs were entitled to their food stamps. In other words, plaintiffs had a property interest that could not be deprived without due process of the law. Therefore, the court reasoned that terminating their welfare benefits, deprived plaintiffs (who lacked independent resources) “of the very means necessary to live.” Likewise, future generations have an entitlement against the effects of climate change, which can be asserted through the Fifth Amendment.

Notwithstanding, in the summer of 2019, the United States District Court for the District of Oregon ruled against plaintiffs making similar claims in Animal Legal Def. Fund v. United States. In Animal Legal Def. Fund, plaintiffs claimed that “the government’s failure to protect them from the effects of climate change has violated their constitutional right to a safe and sustainable environment.” The District Court denied the claims due to a “failure to state a claim” and “lack of standing.” Judge Michael J. McShane, dismissed the claims with prejudice because he believed that the plaintiffs’ claims were too “revolutionary” in nature. Judge McShane explicitly rejected a ruling that would create a new fundamental right. Judge McShane stated that he cannot recognize a “right to wilderness” under the Fifth and Fourteenth Amendments. The Judge distinguished this case from the Juliana case because the plaintiffs’ claims were overly broad and “sweeping,” and were not narrow enough to seek redressability. Whereas, Judge McShane acknowledges that the courts will recognize claims that are “particularized harms” associated with climate change, the court cannot address “generalized grievances.”

100. CHEMERINSKY, supra note 25, at 830, 836.
101. Id.
103. Id. at 263–64.
104. Nguyen, supra note 90, at 199.
106. Id. at 1297, 1299.
107. Id. at 1299.
108. Id. at 1297.
109. Id. at 1297.
111. Animal Legal Def. Fund, 404 F. Supp. 3d at 1298.
112. Id. at 1297–98.
Although Judge McShane noted that the “right to a stable climate” claims in *Juliana* are viable under the Fifth and Fourteenth Amendments, sweeping claims like the “right to wilderness” made in *Animal Legal Def. Fund*, are too generalized for the courts to address.\(^{113}\) This Note is not arguing against the principles of justiciability. Instead, this Note argues that courts throughout the country must begin to recognize that Fifth and Fourteenth Amendments provide a firm legal basis for effective protections against climate change. If courts were to accept and recognize that protection from climate change is a fundamental right, this would create more positive outcomes.\(^{114}\) For example, this would provide speedy relief for climate change victims.\(^{115}\) This recognition would further implore Congress to pass more cutting-edge legislation to reduce carbon emissions and implement policies and guidelines beneficial to vulnerable populations in the U.S.\(^{116}\)

### B. No State Shall Deny to Any Person Within Its Jurisdictions the Equal Protection of the Laws.

Professor Chemerinsky agrees that substantive due process is the principle that allows courts to protect certain fundamental rights from government interference, even when procedural protections are present or the rights are not specifically mentioned elsewhere in the U.S. Constitution.\(^{117}\) The Constitution should always apply in cases involving protections against climate change because the effects of climate change erode the principle of fundamental rights.\(^{118}\) Combating climate change means protecting the basic existence of human beings.\(^{119}\) Therefore, climate activists would find it easier to litigate in court when asserting due process and equal protection claims if courts begin to recognize the right to living in a healthy environment as a fundamental right under the Constitution.\(^{120}\) The Constitution provides environmental protections for individuals because protection against climate

\(^{113}\) Id. at 1302.


\(^{117}\) CHEMERINSKY, supra note 25, at 825.


\(^{120}\) CORNELL L. INFO. INST., supra note 58.
change is an innate right that is "deeply rooted in this Nation’s history and tradition."\textsuperscript{121} \textit{Washington v. Glucksberg} confirmed that fundamental liberty interests are protected by the Due Process Clause, and that a fundamental right is "implicit in the concept of ordered liberty such that neither liberty nor justice would exist if they were sacrificed."\textsuperscript{122}

Tracing the Fourteenth Amendment to its creation reveals that John Bingham "envisioned a federal Constitution that would protect the fundamental freedoms and equality of all Americans."\textsuperscript{123} Historical records show that the Fourteenth Amendment was modified several times before it was ratified in 1868.\textsuperscript{124} However, the Congressional documents trace back to Bingham’s original intent that all men had equal protection under the law.\textsuperscript{125} Leading from the premise that man has a natural right, Bingham expressly wrote that everyone had natural rights to be revendicated under the Fourteenth Amendment.\textsuperscript{126} Justice Black gave a lengthy dissent in \textit{Adamson v. California},\textsuperscript{127} arguing that the Court’s reading was overly narrow and against Bingham’s original intent.\textsuperscript{128} He starts by stating, “this Court is endowed by the Constitution with boundless power under ‘natural law’ periodically to expand and contract constitutional standards to conform to the Court’s conception of what at a particular time constitutes ‘civilized decency’ and ‘fundamental liberty and justice.’”\textsuperscript{129} Black continued by scolding the Court for giving “much less effect to the Fourteenth Amendment than some of the public men active in framing it’ had intended it to have.”\textsuperscript{130} Justice Black’s dissent clearly demonstrates the void between how the Fourteenth Amendment is being interpreted today and its original intent. Following this argument, Judge McShane could have created a new fundamental right that would have been more favorable to plaintiffs in climate change cases.

The courts must enforce the fundamental right of climate change protection by applying strict scrutiny.\textsuperscript{131} The Supreme Court has long

\textsuperscript{122} Id. at 721.
\textsuperscript{124} \textit{10 Supreme Court Cases About the 14th Amendment}, NAT’L CONST. CTR. (July 9, 2020) https://constitutioncenter.org/blog/10-huge-supreme-court-cases-about-the-14th-amendment.
\textsuperscript{125} Cong. Globe, \textit{supra} note 123.
\textsuperscript{126} Twining v. New Jersey, 211 U.S. 78 (1908).
\textsuperscript{127} Adamson v. California, 332 U.S. 46, 69 (1947).
\textsuperscript{128} Id.
\textsuperscript{129} Griswold, 381 U.S. at 488.
\textsuperscript{130} Adamson, 332 U.S. at 74.
\textsuperscript{131} See United States v. Carolene Prods. Co., 304 U.S. 144, 152 (1938) (explaining that a court would exercise a stricter standard of review when a law violates a provision of the constitution).
established that a fundamental right triggers the application of strict scrutiny. United States v. Carolene Products Co. established that under the strict scrutiny test, the Government must show a compelling interest that the means taken are narrowly tailored to achieve these interests. Carolene Products established that the Fifth and Fourteenth Amendments protect “discrete and insular minorities” that: (1) have suffered a history of discrimination; (2) have distinguishing characteristics that do not inhibit the group from contributing meaningfully to society; (3) the characteristic must be immutable; and (4) they must be politically powerless. The Carolene Products criteria formalized levels of abstraction under the strict scrutiny standard for cases of a similar nature. The criteria originating in Carolene Products applies to climate change cases. First, for at least fifty years, the Government knows or has reason to know that catastrophic levels of pollution are detrimental to vulnerable communities. Second, the Government has done nothing to protect these vulnerable communities. Third, the effects of climate change have been attributed to cause the onset of certain illnesses like respiratory illness. Further, many people are being displaced all over the U.S. because of changing weather patterns. Lastly, these vulnerable populations rarely benefit from political representation and litigation is the only viable solution to protect their interests.

These levels of abstraction highlight even further that the U.S. Government has failed to protect “discrete and insular minorities” from the effects of climate change. Courts must apply the Fifth and Fourteenth Amendments to climate change cases to offer remedies against recurring violations of people’s fundamental rights. Furthermore, in Washington v. Davis, the Supreme Court established that a claim of disparate impact was not enough and that parties must have proof of discrimination or discriminatory purpose. Inaction from the federal government is evidence that discrimination against climate change victims continues to occur. The
threat of climate change remains imminent. Humans continue to die or have their lifespan shortened. 144 Food shortages and widespread damage to property are on the rise and the planet’s ecosystem continues to deteriorate. 145

At the same time, the recent ruling in *Clean Air Council v. United States* further highlights challenges for plaintiffs wanting to move forward with constitutional claims against climate change. 146 In *Clean Air Council*, the United States Eastern District Court of Pennsylvania rejected plaintiffs’ prayer to “declare that the United States of America…have violated and will violate plaintiffs' rights by considering amendments to environmental laws, by ‘rolling back’ environmental regulations, and by making related personnel and budget changes.” 147 The District Court denied the plaintiffs’ claims because they did not have any “legally cognizable due process right to environmental quality . . .” 148 Until courts begin to apply a broader interpretation of the Fifth and Fourteenth Amendment, it will be difficult for climate change victims to receive the redress they deserve. The courts need to apply climate change protections to the Fifth and Fourteenth Amendments because they provide a firm legal basis for effective protections against climate change.

II. SOLUTIONS

Historically, when compared to other methods of environmental protections, constitutional protections against environmental violations have not been the most effective solution. 149 However, this section will demonstrate that when applied effectively, the Fifth and Fourteenth Amendments provide a firm legal basis for effective protections against climate change. When properly applied, the “constitutional incorporation, implementation, and jurisprudence of environmental rights, duties, procedures, policies and other provisions” promote effective environmental

144. *Juliana I*, 217 F. Supp. 3d. at 1250; see *Juliana II*, 339 F. Supp. 3d. at 1098 (explaining that a claim for a due process violation is established when a complaint alleges governmental action that knowingly will cause human deaths); *Juliana III*, 947 F.3d at 1164.

145. *Juliana I*, 217 F. Supp. 3d. at 1250; see *Juliana II*, 339 F. Supp. 3d. at 1098 (explaining that a claim for a due process violation is established when a complaint alleges governmental action that knowingly will cause human deaths); *Juliana III*, 947 F.3d at 1164.


147. *Id.*

148. *Id.* at 250.

This Note supports solutions anchored in the principle of environmental constitutionalism. This Note posits solutions in tandem with the following principles of environmental constitutionalism: (1) all countries should adapt textual incorporation and judicial engagement in the fight against climate change; (2) all countries should include the notion of environmental sustainability in their constitutions and; (3) giving nature itself rights as a legal personality to protect itself against threats to extinction. These principles can all serve as a template for plaintiffs in climate change suits to apply legislative and judicial pressure to demand a shift in U.S. constitutional protections.

A. Several International Developments Demonstrate How Constitutional Protections are at the Core of Creating the Right to a Healthy Environment; The U.S. Constitutional Framework Also Allows for the Creation of New Fundamental Rights

The broad scope of environmental constitutionalism has allowed several countries to broaden the paradigm to fit within their constitutional realities. Proponents of “climate constitutionalism” argue for the “express incorporation of climate change into constitutional texts and a judicial interpretation implying obligations to address climate change from other express constitutional rights to life, dignity, due process, or a healthy environment.” Because of these far-reaching implications of climate change, there has been a “worldwide phase in constitutional litigation regarding the climate.”

In 2018, the Constitutional Court of Columbia handed down a landmark decision to protect the Amazon against climate change. This is a riveting example of how 25 plaintiffs—varying from ages 7 to 26—successfully carried individualized constitutional claims that evidenced the loss of the Amazon from deforestation was occurring at such a rapid rate between 2015 and 2016, that Colombia had already lost roughly 44% of its Amazonian

150. ELGAR ENCYCL. OF ENV’T L., supra note 15, at 93.
151. Id. at 95–96.
154. Id.at 96.
systems that recognize, respect and enforce “Rights of Nature.” The plaintiffs were able to prove that the Colombian Government failed to prevent the deforestation even though they knew of the consequences. The plaintiffs prevailed because the presiding judge ruled “the Amazonian ecosystem is vital for the future of the globe,” and the Colombian Amazon “enjoys legal rights to protection, conservation, maintenance, and restoration from the State.”

As of 2019, at least seven countries have expressly addressed climate change in their constitutions. Namely, the Dominican Republic, Venezuela, Ecuador, Vietnam, Tunisia, Cote D’Ivoire, and Thailand. Furthermore, activists and interest groups have successfully made advances in climate justice claims even in countries that have not expressly adapted their constitutions to reflect climate change protections. Climate activists manage to assert protections from their respective constitutions under the right to life and dignity; as well as the rights to health and welfare. The worldwide trend is therefore gaining momentum. Fortunately, the U.S. already has a constitutional framework to support environmental constitutionalism. Whereas enforcement is currently lacking, the U.S. Government must begin to apply the Fifth and Fourteenth Amendments as a firm legal basis for effective protections against climate change.

156. Elgar Encycl. of Env’t L., supra note 15, at 97.
157. Env’t L. ALL. WORLDWIDE, supra note 153.
159. Gbenre v. Shell Petroleum Dev. Co. Nigeria Ltd. [2005] FHCLR 1 (Nigeria); Urgenda Foundation v. Kingdom of the Netherlands (2019) C/09/456689/HA ZA 13-1396 (HR) (Neth.); see Elgar Encycl. of Env’t L., supra note 15, at 96–99 (“Even in absence of express constitutional incorporation, there is a growing body of jurisprudence from international and regional courts and tribunals worldwide concerning climate change . . . an increasing number of courts has turned to other constitutional rights – including to life, health, dignity, or a healthy environment - to advance climate justice.”); see also Ashgar Leghari v. Fed. of Pak., (2015) W.P. 25501 (Lahore) 1 (Pak.) (stating that fundamental rights to life include the right to a healthy environment).
B. Constitutional Protections Symbolize That Nature is the Bearer of Judicially Cognizable Rights

If nature has these judicially cognizable rights, then nature is the rights holder that can vindicate the integrity of its ecosystems, rather than any individual element thereof in isolation. Proponents of the rights of nature argue that people “have the legal authority and responsibility to enforce these rights on behalf of ecosystems.” GARN proponents affirm that “[t]he ecosystem itself can be named as the injured party, with its own legal standing rights, in cases alleging rights violations.” Countries such as Ecuador, India, and Colombia have paved the way by creating legal structures that formally recognize these inalienable rights of nature. The leading example has been Ecuador, which has been lauded as the first country to recognize Rights of Nature in its Constitution. Ecuador’s rewritten Constitution was ratified by referendum in September 2008. The Ecuadorian example has become a new driving force for climate litigants to mount cases against the respective governments to protect the Amazon. In many instances, the Amazon cases have resulted in confirmed instance of due process rights violations where the courts would have otherwise ruled against the plaintiffs. The above examples confirm that other countries are reshaping their constitutional protections to address the urgent matter of climate change. Therefore, the time is right for U.S. courts to recognize that the Fifth and Fourteenth Amendments provide a firm legal basis for effective protections against climate change.

163. GARN 2, supra note 162.
165. GARN 1, supra note 162.
166. Id.
167. See generally ELGAR ENCYCL. OF ENV’T L., supra note 15 (discussing the example of Ecuador as one of the countries to take the lead in protecting rights of nature).
168. GARN 1, supra note 162.
170. See Rep. of the U.N. Conf. on the Human Env’t, U.N. Doc. A/CONF.48/14/Rev.1 (June 1972) (detailing that one main focus of the conference was environmental health and sustainability).
C. Environmental Sustainability Should be Incorporated as a Constitutional Right to Foster and Promote Environmental Protections

Sustainability is another viable solution geared towards implementing environmental protection mechanisms. The world’s movement towards sustainability can be traced from the 1972 Stockholm Declaration on the Human Environment. The next important phase was the 1987 World Commission on Environment Development’s report: Our Common Future. The report defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Then came the Earth Summit Declaration of 1992, held in Rio de Janeiro, Brazil. The first principle of the Earth Summit Declaration of 1992 is that “human beings are at the center of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.” This pact was renewed in 2015 with the 2030 Agenda for Sustainable Development. The preamble for the agenda opens with: “This Agenda is a plan of action for people, planet and prosperity. It also seeks to strengthen universal peace in larger freedom.” As a result, on these Accords, more than 36 countries have already incorporated sustainability in their constitutions. The Paris Agreement, adopted in 2016, sought as one of its key prerogatives to “[r]ecognize the need for an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge.” Therefore, by applying a constitutional framework to environmental protections, the U.S. would fulfill its commitment to protecting its populations against the effects of climate change.

175. Id.
177. Id.
179. Id. art. 7 § 2.
CONCLUSION

To conclude, I agree with Ken Saro-Wiwa when he said that “[t]he environment is man’s first right. Without a clean environment, man cannot exist to claim other rights, be they political, social, or economic.”¹⁸⁰ Ken Saro-Wiwa died trying to protect the Ogoni people of Nigeria who were at the mercy of multinational oil companies that exploited their oil-rich land for profits.¹⁸¹ This is just one example of what happens when environmental violations go unpunished. With the express protection from the U.S. Constitution, cases like Juliana prove that protections against climate change are fundamental rights protected under the Constitution. As Judge Staton correctly stated in so many words, “the time is now for the Government to give its unwavering attention to stemming climate change.”¹⁸² The Ninth Circuit ruled erroneously. Climate activists await the Ninth Circuit’s reconsideration of Juliana. The time is right to expand the discussion for a U.S. framework on environmental constitutionalism. The U.S. Constitution already has the necessary provisions, and it will be up to us as law students, scholars, lawyers, advocates, and lawmakers to address the issue of climate change head on.

¹⁸⁰. UNITED NATIONS ENV'T, supra note 1; Laura Westra, Development and Environmental Racism: The Case Of Ken Saro-Wiwa And The Ogoni, 6 RACE, GENDER, & CLASS 152, 155 (1998).
¹⁸¹. UNITED NATIONS ENV’T, supra note 1; see GOLDMAN ENV’T PRIZE, supra note 1 (providing a biography for Ken Saro-Wiwa).
¹⁸². Juliana III, 947 F.3d at 1191.