

NOTES

TOWARD DISTRIBUTED NATURE: THE AFFORESTATION EASEMENT AND A REGENERATIVE LAND ETHIC

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Anthropogenic climate change is altering humanity's relationship to the natural world. As extreme weather events become more frequent and biodiversity plummets, humankind has three responsibilities: lower carbon dioxide emissions, preserve what remains of the natural world, and generate new pockets of nature to slowly rebuild what we have destroyed.

Trees—particularly when grouped together in forests—are humanity's allies. Yet while tree planting is an often-hailed solution to climate change, few legal tools exist in the United States to foster afforestation on private land. Current federal programs directed at tree planting focus on lumber production or agriculture, with little attention to small-scale afforestation projects aimed at restoring and recreating the natural world.

This Note joins a growing body of literature suggesting that individual property owners can make a difference in the fight against climate change by supporting natural landscapes. It terms a subset of these efforts “distributed nature” and posits that incentivizing property owners to engage in distributed nature requires legal intervention. It then suggests a legal tool, the afforestation easement, which would provide individual landowners with tax benefits for donating their land for permanent afforestation. Along the way, it reimagines the concept of “conservation” to include setting aside land not only for static preservation but also for dynamic regeneration.

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“[A] land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such.”

— Aldo Leopold.¹

INTRODUCTION

Humanity is the most influential species on the planet.² It has colonized the globe,³ harnessed the energy of the elements,⁴ and even traveled into space.⁵ In its rise, however, humanity has imperiled not only its own continuing existence but also life on the very planet it inhabits. Human activities are causing the climate to change,⁶ other living beings are disappearing at alarming rates,⁷ and vast tracts of wilderness are being eliminated almost daily.⁸ Humanity is powerful, and it is destructive.

Having demonstrated its ability to alter the planet, humanity has a responsibility to exercise that ability with care. The species itself cannot expect to survive the long-term impacts of its own destructive tendencies.⁹

1. Aldo Leopold, *An Ethic for Man-Land Relations*, in *The American Environment: Readings in the History of Conservation* 105, 107 (Roderick Nash ed., 2d ed. 1976) [hereinafter Nash, *The American Environment*].

2. See Edward O. Wilson, *Half-Earth* 12 (2016) (“Here on Earth [humanity’s] name is *Power*.”).

3. See Craig Welch, *Earth Now Has 8 Billion People—And Counting. Where Do We Go From Here?*, *Nat’l Geographic* (Nov. 14, 2022), <https://www.nationalgeographic.com/environment/article/the-world-now-has-8-billion-people> (on file with the *Columbia Law Review*) (reporting that the world population, as of November 2022, likely reached eight billion).

4. See, e.g., *How Does Solar Work*, *Off. Energy Efficiency & Renewable Energy*, <https://www.energy.gov/eere/solar/how-does-solar-work> [<https://perma.cc/QKH3-3PEL>] (last visited Jan. 12, 2023) (“When the sun shines onto a solar panel, energy from the sunlight is absorbed by the [photovoltaic] cells in the panel. This energy creates electrical charges that move in response to an internal electrical field in the cell, causing electricity to flow.”).

5. *A to Z List of NASA Missions*, NASA, <https://www.nasa.gov/a-to-z-of-nasa-missions/> [<https://perma.cc/3BWU-XAEC>] (last visited Mar. 1, 2024) (listing all U.S. government space missions).

6. The 2022 Intergovernmental Panel on Climate Change (IPCC) report speaks of “human-induced climate change” without qualification. See IPCC, *Climate Change 2022: Impacts, Adaptation and Vulnerability: Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change 9* (2022) (on file with the *Columbia Law Review*) [hereinafter IPCC, *Climate Change 2022*].

7. See Elizabeth Kolbert, *The Sixth Extinction: An Unnatural History* (2014) (arguing that human activity is causing an extinction level event comparable to only five other instances in the past half-billion years); *infra* notes 26–31 and accompanying text (detailing the scope of current species die-off).

8. See, e.g., *infra* note 31 and accompanying text (describing the example of the Amazon rainforest).

9. See Wilson, *supra* note 2, at 13 (“[O]ur physical bodies[] have stayed as vulnerable as when we evolved millions of years ago. We remain organisms absolutely dependent on other organisms. People can live unaided by our artifacts only in bits and slivers of the biosphere, and even there we are severely constrained.”).

Self-preservation—as well as a duty toward other living beings—demands that humanity begin viewing its relationship to the natural world with the eyes of stewards rather than of conquerors. Part of that stewardship is protecting those natural environments that still exist.¹⁰ But another part is restoring what has been lost.¹¹

The natural world has demonstrated a remarkable ability to regenerate when left alone or when assisted by human beings.¹² But any restoration and regeneration of the natural world requires space and time. In the United States, that means confronting the reality of private property ownership.¹³ The fact that so much of America's land is privately held means that individual engagement will be a necessary element in any regenerative environmental ethic.¹⁴

This Note labels the regeneration of the natural world on individual property “distributed nature” and argues that the federal government—because these efforts must be nationwide to have a truly restorative impact—must implement policies that incentivize participation in the effort. To that end, legal tools must be designed to encourage private landowners to use their lands for the benefit of other living beings. This Note suggests one such tool to foster the regeneration of one of nature's most valuable resources: trees.

Tree planting is often heralded as a solution to all the climate problems facing the world.¹⁵ While planting trees is not a silver bullet, trees are extraordinary beings with many positive qualities.¹⁶ And tree planting is one of those rare practices that can attack both sides of the climate crisis—the need to decarbonize and the need to halt biodiversity loss¹⁷—in one act.

10. See, e.g., *infra* note 35 (describing conservationist policies recently announced by world governments).

11. See Douglas W. Tallamy, *Nature's Best Hope* 24, 26 (2019) (“We need a new conservation plan, one that sustains the living systems we depend on everywhere . . . [and] create[s] landscapes that contribute to rather than degrade local ecosystem function.”).

12. See *id.* at 26 (“[W]e are learning how rapidly the animals return to our yards, parks, open spaces, neighborhoods, and even cities when we landscape sustainably.”).

13. See *infra* notes 41–43 and accompanying text (describing private property's deep roots in American law and tracking the extent of current private property ownership in the United States).

14. Sixty percent of the land in America is privately owned. Ruqaiyah Zarook, *Map of the Week: Mapping Private vs. Public Land in the United States*, Ubique, <https://ubique.americangeo.org/map-of-the-week/map-of-the-week-mapping-private-vs-public-land-in-the-united-states/> [<https://perma.cc/CD83-2XQC>] (last visited Oct. 13, 2022). For a discussion of the ways in which individuals are already mobilized to help fight climate change, see *infra* notes 44–48 and accompanying text.

15. See *infra* notes 68–75 and accompanying text.

16. See *infra* notes 73–77 and accompanying text.

17. See David Wallace-Wells, *Opinion, Has Climate Change Blinded Us to the Biodiversity Crisis?*, *N.Y. Times* (Dec. 21, 2022), <https://www.nytimes.com/2022/12/21/opinion/climate-change-biodiversity-crisis-cop15.html> (on file with the *Columbia Law Review*) (arguing that a focus on decarbonization ignores considerations of solutions to the loss of biodiversity).

This Note adopts tree planting—and, more specifically, afforestation¹⁸—as both a valuable end unto itself and an example of the kind of act that could characterize a broader regenerative land ethic. The Note therefore designs a legal instrument—the afforestation easement¹⁹—that could prove valuable both as a tool in the distributed nature toolbox and as a model of how to adapt existing American legal structures to the needs of this moment.

This Note proceeds in three Parts. Part I details the perilous state of the world and its inhabitants, discusses the benefits of trees and forests, and outlines an ideal of afforestation. Part II examines current federal tax incentives and programs that support, or could be used to support, afforestation. And Part III suggests a new tool to fill the gaps left by those incentives and programs: the afforestation easement.

I. EARTH AND TREES

A. *State of the World*

Global climate change is here. It is causing extreme weather,²⁰ contributing to biodiversity loss,²¹ and seeding mass hopelessness.²² Poor nations with minimal historic contributions to the crises they now face are

18. See *infra* section I.C.3 and accompanying text (distinguishing afforestation from other forms of tree planting).

19. See *infra* Part III.

20. See IPCC, *Climate Change 2022*, *supra* note 6, at 9. For two recent headlines demonstrating the prevalence of extreme weather events, see Anna Betts & Jamie McGee, *Lingering Cold Puts Millions in the South Under Harsh Conditions*, *N.Y. Times* (Jan. 20, 2024), <https://www.nytimes.com/2024/01/20/us/cold-weather-ice-wind-snow-south.html> (on file with the *Columbia Law Review*); Corina Knoll & Vik Jolly, *In San Diego, Furious Deluge Floods Homes and Freeways*, *N.Y. Times* (Jan. 22, 2024), <https://www.nytimes.com/2024/01/22/us/san-diego-storm-flood.html> (on file with the *Columbia Law Review*). These are, of course, isolated incidents. But the general trend follows. See Henry Fountain & Mira Rojanasakul, *The Last 8 Years Were the Hottest on Record*, *N.Y. Times* (Jan. 10, 2023), <https://www.nytimes.com/interactive/2023/climate/earth-hottest-years.html> (on file with the *Columbia Law Review*); Raymond Zhong & Keith Collins, *See How 2023 Shattered Records to Become the Hottest Year*, *N.Y. Times*, <https://www.nytimes.com/2024/01/09/climate/2023-warmest-year-record.html> (Jan. 9, 2024) (on file with the *Columbia Law Review*) (last updated Jan. 12, 2024). According to the EPA, extreme weather events will continue as a result of global climate change. *Climate Change Indicators: Weather and Climate*, EPA, <https://www.epa.gov/climate-indicators/weather-climate> [<https://perma.cc/EFN4-VGAD>] (last updated July 26, 2023).

21. Press Release, World Wildlife Fund, *69% Average Decline in Wildlife Populations Since 1970, Says New WWF Report* (Oct. 13, 2022), <https://www.worldwildlife.org/press-releases/69-average-decline-in-wildlife-populations-since-1970-says-new-wwf-report> [<https://perma.cc/S57E-GKDH>].

22. Experts in the field are now recognizing the negative mental health effects of climate change. See, e.g., *Urgent Need to Address Mental Health Effects of Climate Change, Says Report*, *Am. Psych. Ass'n* (Nov. 4, 2021), <https://www.apa.org/news/press/releases/2021/11/mental-health-effects-climate-change> [<https://perma.cc/P2G9-D5AL>].

finding themselves on the brink of destruction.²³ The world can expect massive migrations of populations from regions that are made uninhabitable by climate change or else made indirectly so because of the ancillary effects of those changes: war, disease, and famine.²⁴ In short, all indications are that the future of life on the planet itself is at stake. And there is little doubt that humanity, as a species, is responsible.²⁵

Widespread as suffering on the planet is and will continue to be among human beings, nonhuman populations have fared worse. A full accounting of the various lifeforms that have been extinguished due to anthropogenic climate change—and other human activities like habitat destruction, pollution, and hunting—is impossible.²⁶ But indications are that in the past half-century, vertebrate populations have seen a nearly seventy percent drop.²⁷ In that same timespan, North America lost close to three billion birds.²⁸ Coral reefs are in jeopardy.²⁹ Pollinators are in decline.³⁰ The great rainforests of the world are being cleared for agriculture or extraction.³¹

23. IPCC, *Climate Change 2022*, supra note 6, at 9. This is happening rapidly in some parts of the world. The Indonesian capital of Jakarta, for example, is sinking into the sea, with estimates that by 2050 at least one third of the city will be under water. Indonesia's Capital Is Rapidly Sinking Into the Sea, NPR (Jan. 26, 2022), <https://www.npr.org/2022/01/26/1075720551/jakarta-indonesia-sinking-into-java-sea-new-capital> [<https://perma.cc/B7MA-SULG>].

24. See John Podesta, *The Climate Crisis, Migration, and Refugees*, Brookings 1–2 (2019), https://www.brookings.edu/wp-content/uploads/2019/07/Brookings_Blum_2019_climate.pdf [<https://perma.cc/AAK2-3RL8>] (exploring the relationship between climate change and global mass migration).

25. So compelling is the evidence of this responsibility that some scientists have suggested the world may be entering a new historical era: the Anthropocene. See Wilson, supra note 2, at 9; Raymond Zhong, *For Planet Earth, This Might Be the Start of a New Age*, N.Y. Times (Dec. 17, 2022), <https://www.nytimes.com/2022/12/17/climate/anthropocene-age-geology.html> (on file with the *Columbia Law Review*) (reporting on this phenomenon). A group of experts recently rejected this idea. See Raymond Zhong, *Are We in the 'Anthropocene,' the Human Age? Nope, Scientists Say*, N.Y. Times (Mar. 5, 2024), <https://www.nytimes.com/2024/03/05/climate/anthropocene-epoch-vote-rejected.html> (on file with the *Columbia Law Review*) (last updated Mar. 8, 2024). Still, the fact of the debate says much about humanity's impact on the climate.

26. See Wilson, supra note 2, at 19.

27. World Wildlife Fund, supra note 21.

28. See Kenneth V. Rosenberg et al., *Decline of the North American Avifauna*, 366 *Science* 120, 120 (2019) (detailing the loss of bird populations).

29. See *Threats to Coral Reefs*, EPA, <https://www.epa.gov/coral-reefs/threats-coral-reefs> [<https://perma.cc/K64A-DNVU>] (last updated Feb. 28, 2024).

30. *Pollinators in Trouble*, Nat'l Park Serv., <https://www.nps.gov/subjects/pollinators/pollinators-in-trouble.htm> [<https://perma.cc/T8GL-YARX>] (“Populations of . . . pollinators are declining around the world.”) (last updated June 18, 2018); Sonny Ramaswamy, *Reversing Pollinator Decline is Key to Feeding the Future*, USDA (June 24, 2016), <https://www.usda.gov/media/blog/2016/06/24/reversing-pollinator-decline-key-feeding-future> [<https://perma.cc/SUP8-ZLWV>] (tying pollinator decline to food security threats); see also Tallamy, supra note 11, at 158–59 (“Four species of bumblebees have declined 96 percent just in the last twenty years . . .” (citation omitted)).

31. See, e.g., Alex Cuadros, *Has the Amazon Reached Its 'Tipping Point'?*, N.Y. Times Mag. (Jan. 4, 2023), <https://www.nytimes.com/2023/01/04/magazine/amazon-tipping-point.html>

Humanity possesses enormous influence over the state of the physical world.³² And, at times, it has chosen to exercise this authority to preserve large swaths of that world.³³ The preservationist impulse was a defining characteristic of the early American conservation movement³⁴ and continues to define the policy solutions of ecologists and governments.³⁵ Preservation serves as an important counterweight to the human tendency to expand, inhabit, and destroy. But preservation is not enough. The natural world is collapsing at an alarming rate, and even those areas protected by law are not immune from the effects of global climate change.³⁶ Many therefore suggest that humanity must not only work to preserve what is left, but must cultivate an active, *regenerative* relationship to the natural world.³⁷ In other words, in order to halt or reverse the devastating impacts of climate change and human activity on the planet—in order to do justice by the other living beings on this planet and ensure the continuance of the human family—human beings must not only take action to preserve those still-undisturbed parts of the natural world but also to ensure that *new* pockets of nature are established and protected.³⁸

(on file with the *Columbia Law Review*) (last updated June 15, 2023) (reporting that seventeen percent of the Amazon rainforest has been cleared for croplands and pasture).

32. See Wilson, *supra* note 2, at 12 (“Here on Earth [humanity’s] name is *Power*.”); see also Elizabeth Kolbert, *Under a White Sky* 6–8 (2021) [hereinafter Kolbert, *Under a White Sky*] (collecting examples of humanity exerting its influence on the natural world, for good and bad).

33. One example is the American National Park system, which protects over eighty-five million acres of public land. See Nat’l Park Serv., *Quarterly Acreage Report, Summary of Acreage: 12-31-2023* (2023), <https://www.nps.gov/subjects/lwcf/upload/NPS-Acreage-12-31-2023.xlsx> (on file with the *Columbia Law Review*). Worldwide, about fifteen percent of land is protected. See Press Release, Int’l Union for Conservation of Nature, *The World Now Protects 15% of Its Land, But Crucial Biodiversity Zones Left Out* (Sept. 3, 2016), <https://www.iucn.org/news/secretariat/201609/world-now-protects-15-its-land-crucial-biodiversity-zones-left-out> [<https://perma.cc/3YUM-ZCTV>].

34. See *infra* section III.B (describing that movement and its philosophy).

35. See Wilson, *supra* note 2, at 3 (suggesting that one half of the earth must be set aside “in reserve” to avert the worst disasters of climate change and species die-off); see also Press Release, Convention on Biological Diversity, *Nations Adopt Four Goals, 23 Targets for 2030 in Landmark UN Biodiversity Agreement* (Dec. 19, 2022), https://prod.drupal.www.infra.cbd.int/sites/default/files/2022-12/221219-CBD-Press-Release-COP15-Final_0.pdf [<https://perma.cc/X9VP-U6AA>] (announcing global targets to protect thirty percent of the world’s “lands, inland waters, coastal areas and oceans” by 2030); Press Release, U.S. Dep’t of the Interior, *Biden–Harris Administration Outlines “America the Beautiful” Initiative* (May 6, 2021), <https://www.doi.gov/pressreleases/biden-harris-administration-outlines-america-beautiful-initiative> [<https://perma.cc/AY58-TJR8>] (last updated Dec. 6, 2023) (outlining a new nationwide goal to conserve thirty percent of land and water by 2030).

36. See, e.g., Incident Information System, InciWeb, <https://inciweb.wildfire.gov/> [<https://perma.cc/7BCW-ZBME>] (last visited May 9, 2024) (showing current wildfires within the national park system in real time).

37. See, e.g., Tallamy, *supra* note 11, at 12–13.

38. See *id.* at 25–26. Humanity has long demonstrated its adeptness at nature-creation. See Kolbert, *Under a White Sky*, *supra* note 32.

B. *Distributed Nature*

The twin crises of climate change and biodiversity loss are distinctly physical and have physical solutions. That is, all proposed solutions to these problems—from wind turbines to afforestation—require one finite resource: land.³⁹ In the United States—which arguably contributes more to climate change and biodiversity loss than any other nation⁴⁰—that need for land means reckoning with the reality of private property.

American arguments around land have been preeminent from the nation's beginning.⁴¹ The lust for acquisition was a driving force in the development of the early republic and resulted in the colonization, by Americans, of what is now the continental United States.⁴² Today, it is estimated that close to sixty percent of all the land in the United States—between 1.3 and 1.4 billion acres—is privately owned.⁴³ Any solutions to the climate crisis involving land, therefore, will inevitably bump up against the reality of private ownership. This reality of private ownership sounds in individual responsibility and the necessity of individual action. American society already enlists individuals in many efforts to mitigate the effects of climate change: distributed solar,⁴⁴ recycling,⁴⁵ energy efficiency,⁴⁶ and others.⁴⁷ And, more recently, commentators and citizens

39. See Michael B. Gerrard, *A Time for Triage*, 39 *Env't F.* 38, 39–40 (2022) [hereinafter Gerrard, *Time for Triage*] (outlining the need for massive amounts of land to complete the renewable energy transition and arguing for prioritizing, in some cases, land use for clean energy growth over certain natural ecosystems).

40. See Umair Irfan, *Why the US Bears the Most Responsibility for Climate Change*, in *One Chart*, Vox, <https://www.vox.com/energy-and-environment/2019/4/24/18512804/climate-change-united-states-china-emissions> [<https://perma.cc/DU8Z-5Q9Y>] (last updated Dec. 4, 2019).

41. See, e.g., *Johnson v. M'Intosh*, 21 U.S. (8 Wheat.) 543, 589–90 (1823) (providing an early example of American thinking about the nature of private property and land use).

42. “Manifest destiny”—the idea that the United States was a chosen land whose people deserved to expand endlessly westward—characterized the continental expansion of the nineteenth century. See Julius W. Pratt, *The Origin of “Manifest Destiny”*, 32 *Am. Hist. Rev.* 795, 795 (1927).

43. See Zarook, *supra* note 14.

44. *Distributed Generation of Electricity and Its Environmental Impacts*, EPA, <https://www.epa.gov/energy/distributed-generation-electricity-and-its-environmental-impacts> [<https://perma.cc/ZDV2-L9UN>] [hereinafter EPA, *Distributed Generation of Electricity*] (last updated May 15, 2023).

45. *National Recycling Strategy*, EPA, <https://www.epa.gov/circulareconomy/national-recycling-strategy> [<https://perma.cc/3MQT-BEYQ>] (last updated Feb. 21, 2024).

46. *Energy Efficiency: The First Fuel of a Sustainable Global Energy System*, Int'l Energy Agency, <https://www.iea.org/topics/energy-efficiency> [<https://perma.cc/UWK8-2HM8>] (last visited Jan. 11, 2023).

47. Some argue that the emphasis on individual action is at best misguided and at worst an active distraction campaign run by the true perpetrators of the climate crisis: corporations. See Michael E. Mann, *The New Climate War: The Fight to Take Back Our Planet 2* (2021) (“[O]ne recent study suggests that the emphasis on small personal actions can actually undermine support for the substantive climate policies needed.”).

are beginning to recognize the need for individual action to generate small-scale natural ecosystems on their own properties.⁴⁸

If properly incentivized and dramatically expanded, these efforts could lead to what this Note calls “distributed nature”: the broadscale regeneration of natural ecosystems on individual private lands.⁴⁹ Distributed nature could marry a federal legal incentive structure with local ecological knowledge and private land stewardship.⁵⁰ With the right legal tools, distributed nature could enlist private landowners in the fight against climate change, provide new habitats for threatened species, and cultivate a regenerative environmental ethic that recognizes the importance of human stewardship. It could see the harmonious cohabitation of humanity and a diversity of flora and fauna right in our own backyards. Many legal tools may be necessary to incentivize distributed nature across the many ecologies of the United States.⁵¹ This Note begins at the federal level, where broad outlines can be sketched and basic values considered. And it will propose one such tool, targeting a specific form of distributed nature: forests.

48. See Tallamy, *supra* note 11, at 25; Cara Buckley, They Fought the Lawn. And the Lawn’s Done., N.Y. Times (Dec. 14, 2022), <https://www.nytimes.com/2022/12/14/climate/native-plants-lawns-homeowners.html> (on file with the *Columbia Law Review*) (last updated Dec. 20, 2022) (detailing one couple’s fight to keep their natural ecosystem on their property in the face of pressure from their homeowner’s association to replace it with a traditional lawn); see also Planting Pollinator Gardens, Am. Horticultural Soc’y, <https://ahsgardening.org/gardening-resources/planting-for-pollinators/> [<https://perma.cc/4SVK-78PQ>] (advising gardeners on assisting pollinators) (last visited Jan. 11, 2023). This understanding has inspired Shubhendu Sharma to launch a global campaign of planting what he calls “tiny forests.” Simran Sharma, Eco-Entrepreneur Shubhendu Sharma On Why Planting an Urban Forest Is the Need of the Hour, Indian Express (July 28, 2022), <https://indianexpress.com/article/lifestyle/life-style/world-nature-conservation-2022-shubhendu-sharma-natural-maintenance-free-urban-forests-miyawaki-technique-8053933/> (on file with the *Columbia Law Review*). For a video of one of Sharma’s projects, see Afforestt, Tiny Forest, YouTube (June 4, 2017), <https://www.youtube.com/watch?v=MDSlft037gk> (on file with the *Columbia Law Review*). As this Note goes to print, the trend is spreading as far as the “concrete jungle,” New York City. See Cara Buckley, Coming Soon to Manhattan, a Brand-New Tiny Forest, N.Y. Times (Mar. 11, 2024), <https://www.nytimes.com/2024/03/11/climate/tiny-forest-roosevelt-island.html?> (on file with the *Columbia Law Review*).

49. This term is borrowed from the idea behind distributed solar: many individual property owners working in individual capacities to solve a collective problem. See EPA, Distributed Generation of Electricity, *supra* note 44 (explaining distributed generation).

50. See generally Tallamy, *supra* note 11, at 34–35 (suggesting tax incentives could be one avenue to incentivize people to turn their backyards into ecologically diverse environments).

51. See *id.* at 79 (describing the importance of native plants and the differences between various American biomes).

C. *The Forests and the Trees*

1. *The State of American Forests.* — It is surprisingly difficult to define the term “forest.”⁵² In 2015, the United Nations suggested that a “forest” is land covering 0.5 hectares (about 1.24 acres) with trees higher than five meters (about 16.4 feet) and a canopy covering more than ten percent of the land.⁵³ Former UN definitions had been similar,⁵⁴ demonstrating that relatively small areas of land (1.24 acres is just slightly larger than an American football field) can constitute forest if properly treed.⁵⁵ Of course, most people think of forests in grandiloquent terms appropriate for the wilderness spread across Alaska or in the jumbled ecosystems of the Amazon.⁵⁶ And in many parts of the world—including the United States⁵⁷—those forests still exist. Despite centuries of deforestation, forests still cover close to a third of the land in the United States.⁵⁸ But between 1950 and 2018, the world lost 0.7 billion hectares of forest (about 1.7 billion acres), reducing the total of forested land in the world from forty-

52. See Robin L. Chazdon, Pedro H.S. Brancalion, Lars Laestadius, Aoife Bennett-Curry, Kathleen Buckingham, Chetan Kumar, Julian Moll-Rocek, Ima Célia Guimarães Vieira & Sarah Jane Wilson, *When Is a Forest a Forest? Forest Concepts and Definitions in the Era of Forest and Landscape Restoration*, 45 *Ambio* 538, 538 (2016) (positing that definitions differ depending on management objectives).

53. *Forest Resources Assessment 2015: Terms and Definitions 3* (Food & Agric. Org., Working Paper No. 180, 2012), <https://www.fao.org/3/ap862e/ap862e00.pdf> [<https://perma.cc/3SL8-GMS8>]. The UN excludes from its definition “land that is predominantly under agricultural or urban land use.” *Id.* It further excludes tree stands that exist primarily for production—for example, fruit tree plantations. *Id.*

54. See Cazdon et al., *supra* note 52, at 542 box 1 (2016) (listing UN definitions).

55. See Michael Kolomatsky, *How Big Is an Acre, Anyway?*, *N.Y. Times* (July 26, 2018), <https://www.nytimes.com/2018/07/26/realestate/how-big-is-an-acre-anyway.html> (on file with the *Columbia Law Review*) (providing the football field example).

56. See Rebecca Robbins, *A Growing Need: Increasing Agricultural and Urban Forestation to Combat Climate Change*, 22 *Vt. J. Env’t L.* 69, 71 (2021) (describing the Alaskan forests); Cuadros, *supra* note 31 (describing the Amazon).

57. The Humboldt-Toiyabe National Forest, for example, covers 6.3 million acres across Nevada and California. See Joshua Knoll, *Seven Largest National Forests*, Nat’l Forest Found., <https://www.nationalforests.org/blog/seven-largest-national-forests> [<https://perma.cc/G9BL-8DEU>] (last visited Feb. 1, 2024).

58. *Forest Area (% of Land Area)—United States*, World Bank <https://data.worldbank.org/indicator/AG.LND.FRST.ZS?locations=US> [<https://perma.cc/J2BD-9HXN>] (last visited Oct. 15, 2022). These forests sequester an enormous amount of carbon. See Richard Birdsey, Princeton’s Net-Zero Study Annex P: *Past and Prospective Changes in the Net CO₂ Flux of U.S. Forests 2* (2022) (estimating the rate of forest CO₂ removal from the atmosphere at -600 Tg CO₂ per year). Because of strong forest management policies, the carbon sequestration potential of American forests has actually *grown* over the past century. See Federico Cheever, Robert McKinstry Jr. & Robert L. Fischman, *Forestry*, in *Legal Pathways to Deep Decarbonization in the United States* 824 (Michael B. Gerrard & John C. Dernbach eds., 2019) [hereinafter Cheever et al., *Forestry*] (“[A]s a result of the adoption of sustainable forestry management, our forests are regrowing and removing [CO₂ previously released by deforestation] from the atmosphere.”).

four percent to thirty-eight percent.⁵⁹ In the two decades between 2001 and 2021, the United States alone lost sixteen percent of its total tree cover.⁶⁰ There is good reason to believe these declines will continue. Wildfires are consuming forests every year.⁶¹ Urban trees are dying off in the extreme heat of American summers.⁶² And the recent Princeton Net-Zero America Study predicts that the amount of carbon dioxide sequestered in American forests will decline over the next several decades due to, among other things, dying trees.⁶³

Most of the forest still standing in the United States—about sixty percent—is privately owned.⁶⁴ This is particularly true of the Eastern United States, where the vast majority of forest is owned by private entities—especially corporations.⁶⁵ All told, there are currently nearly 443 million acres of privately owned forest in the United States.⁶⁶ Hundreds of millions of acres of private land are currently being put to uses other than forest.⁶⁷ But there are many who would like to see that changed.

59. Hanna Ritchie, Forest Area, Our World in Data (Feb. 4, 2021), <https://ourworldindata.org/forest-area> [<https://perma.cc/U5HQ-RSXD>].

60. United States, Glob. Forest Watch, <https://www.globalforestwatch.org/dashboards/country/USA/?map=eyJjYW5Cb3VuZCI6dHJ1ZX0%3D> [<https://perma.cc/6ZSR-4X6N>] (last visited Jan. 11, 2023).

61. U.S. Wildfires, Nat'l Ctrs. for Env't Info., <https://www.ncei.noaa.gov/access/monitoring/wildfires/month/0> [<https://perma.cc/QMB9-JSP4>] (last visited Jan. 11, 2023).

62. See, e.g., Manuel Valdes, As Climate Change Progresses, Trees in Cities Struggle, L.A. Times (Nov. 16, 2022), <https://www.latimes.com/world-nation/story/2022-11-16/as-climate-change-progresses-trees-in-cities-struggle> (on file with the *Columbia Law Review*).

63. Birdsey, *supra* note 58, at 6 (listing deforestation, reduced afforestation, aging forest, increasing use of wood for bioenergy, and natural disturbances such as wildfire and bark beetles as the main reasons for the declining carbon sequestration potential of U.S. forests). But Birdsey also writes that “[I]and-use change . . . is the dominant driver of [this] projected decline in net CO₂ flux.” *Id.* at 7.

64. See Who Owns America's Forests?, Nat'l Ass'n State Foresters, <https://www.stateforesters.org/timber-assurance/legality/forest-ownership-statistics/> (on file with the *Columbia Law Review*) (last visited Mar. 18, 2024) (indicating that the federal government owns thirty percent of the nation's forests, that state governments own an additional ten percent, and that private owners own sixty percent); see also Cheever et al., *Forestry*, *supra* note 58, at 830 (providing similar numbers).

65. See U.S. Forest Serv., Map: Forest Ownership in the Conterminous United States (2010) (on file with the *Columbia Law Review*) (“In the East, more than [eighty] percent of forest land is privately owned.”).

66. Katie Hoover & Anne A. Riddle, Cong. Rsch. Serv., R46976, U.S. Forest Ownership and Management: Background and Issues for Congress 28 (2021).

67. See Major Land Uses Summary Table 1: Major Uses of Land by Region, State, and the United States, Econ. Rsch. Serv., USDA, https://rejourer.perma.cc/replay-web-page/w/id-2b392572f380/mp_/https://www.ers.usda.gov/webdocs/DataFiles/52096/Summary_Table_1_major_uses_of_land_by_region_and_state_2012.xls?v=6328.1 (on file with the *Columbia Law Review*) (last updated Mar. 27, 2023) (indicating that the major uses of land in the United States are cropland, grassland pasture and range, forest use, special use, and to a much smaller degree, urban areas).

2. *Tree Planting and Climate Change.* — Tree planting is often suggested as a means to combat the climate crisis.⁶⁸ The benefits of trees—and, more specifically, of forests—are difficult to deny.⁶⁹ They clean water, purify air, provide shade, and serve as homes for countless living things.⁷⁰ Because of their ability to store carbon, a chief contributor to global climate change,⁷¹ they are a critical ally in the struggle to preserve a habitable planet.⁷² And apart from the services they provide others, trees are living beings themselves, capable of much that human beings are only beginning to understand.⁷³

It is small wonder, then, that many—even climate change skeptics—have advocated tree planting.⁷⁴ But tree planting, beneficial as it may be, is not a one-stop solution. Trees take too long to grow, are too vulnerable, and take up too much land to bear the brunt of fighting global climate change. That burden rests squarely on humanity's shoulders. Moreover, because tree planting is an expressive act—and one with real ecological benefits—it has become characteristic of climate-harming governments and corporations to adopt the practice as an advanced form of greenwashing.⁷⁵ Greenwashing makes viewing tree planting as a solution to global climate change especially pernicious—too much belief in it can

68. See Zach St. George, *Can Planting a Trillion New Trees Save the World?*, N.Y. Times Mag. (July 13, 2022), <https://www.nytimes.com/2022/07/13/magazine/planting-trees-climate-change.html> (on file with the *Columbia Law Review*) (last updated June 15, 2023) (detailing worldwide efforts to plant trees to combat the climate crisis).

69. See *id.*; see also Cheever et al., *Forestry*, *supra* note 58, at 827.

70. See Cheever et al., *Forestry*, *supra* note 58, at 823; see also Michael B. Gerrard, *Heat Waves: Legal Adaptation to the Most Lethal Climate Disaster (So Far)*, 40 U. Ark. Little Rock L. Rev. 515, 530 (2018) (explaining the importance of urban trees in creating shade during dangerous heat waves).

71. *Causes of Climate Change*, EPA, <https://www.epa.gov/climatechange-science/causes-climate-change> [<https://perma.cc/5U57-W7PJ>] (last updated Apr. 25, 2023).

72. In 2022, forests stored 59.7 billion metric tons (BMT) of carbon. See Katie Hoover & Anne A. Riddle, Cong. Rsch. Serv., R46313, *U.S. Forest Carbon Data: In Brief 3* (2023). To put that into perspective, in 2022, the United States emitted over six BMT of carbon dioxide. *Inventory of U.S. Greenhouse Gas Emissions and Sinks*, EPA <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks> [<https://perma.cc/BNR2-R93X>] (last updated Apr. 11, 2024) (“In 2022, U.S. greenhouse gas emissions totaled 6,343 million metric tons of carbon dioxide equivalents, and 5,489 million metric tons of carbon dioxide equivalents after accounting for sequestration from the land sector.”).

73. See Peter Wohlleben, *The Hidden Life of Trees: What They Feel, How They Communicate* 50–54 (2015) (describing the interior lives of trees and forests). In short, trees are miracles of nature and should be accorded proper awe.

74. See, e.g., Press Release, U.S. Dep’t of the Interior, *Trump Administration Furthers Commitment to One Trillion Trees Initiative* (Oct. 13, 2020), <https://www.doi.gov/pressreleases/trump-administration-furthers-commitment-one-trillion-trees-initiative> [<https://perma.cc/7GR7-6EXV>] (last modified Sept. 29, 2021) (announcing the previous administration’s intention to aggressively support tree planting).

75. See Sophia Smith Galer, ‘Greenwashing’: Tree-Planting Schemes Are Just Creating Tree Cemeteries, *Vice* (Sept. 1, 2022), <https://www.vice.com/en/article/v7v75a/tree-planting-schemes-england> [<https://perma.cc/4VS5-NSM7>]; see also St. George, *supra* note 68.

draw attention away from the harms done by emitters and purveyors of ecological destruction, and away, too, from other, necessary practices.

But despite its shortcomings, tree planting is a good thing and should be encouraged. Trees have myriad benefits. They offer one positive solution—albeit an incomplete one—to both carbon emissions and biodiversity loss. And planting a tree (or many trees) is an achievable individual act.⁷⁶ Trees can repair damaged landscapes.⁷⁷ Or they can transform unnatural private landscapes into thriving examples of distributed nature. Therefore, although tree planting cannot replace other necessary climate-friendly actions, this Note recognizes the value of tree planting as a legitimate goal of legal policy.

3. *Afforestation*. — Like the term “forest,” “afforestation” is difficult to define. Merriam-Webster defines it as “the act or process of establishing a forest especially on land not previously forested.”⁷⁸ In law, the term is hard to find. The only federal statute that uses the word “afforestation” leaves the term undefined.⁷⁹ And the only state that provides a definition is Maryland, which, in its Code of Maryland Regulations, defines the term as “the establishment of tree cover on an area from which it has always or very long been absent, or the planting of open areas which are not presently in forest cover.”⁸⁰

This definition distinguishes afforestation from the more common act of reforestation.⁸¹ During reforestation, the land on which trees are to be planted has recently been forest and will be so again.⁸² It implies that the land, as it currently exists, has known forest. “Afforestation,” on the other hand, indicates that the land targeted for tree planting has not been forest

76. A Google search for “plant trees near me” demonstrates this.

77. See *Tree Planting and Ecosystem Restoration: A Crash Course*, United Nations Decade on Ecosystem Restoration, <https://www.decadeonrestoration.org/Interactive/tree-planting-and-ecosystem-restoration-crash-course> [<https://perma.cc/BP48-YSAB>] (last visited Jan. 11, 2023).

78. *Afforestation*, Merriam-Webster, <https://www.merriam-webster.com/dictionary/afforestation> [<https://perma.cc/63GX-R52X>] (last visited Jan. 11, 2023). The Oxford English Dictionary (OED) supplies a similar definition: “the *conversion* of land into forest or woodland.” *Afforestation*, Oxford English Dictionary, https://www.oed.com/dictionary/afforestation_n (on file with the *Columbia Law Review*) (last visited Mar. 10, 2024) (emphasis added).

79. See 16 U.S.C. § 2103a(d)(3) (2018).

80. Md. Code Regs. § 15.15.13.02(B)(1) (2023).

81. Both of these acts are distinct from normal tree planting because they seek to reach the final state of “forest,” which requires many trees. See *supra* notes 52–55 and accompanying text.

82. See *Reforestation*, Merriam-Webster, <https://www.merriam-webster.com/dictionary/reforestation> [<https://perma.cc/NR29-YU5W>] (last visited Mar. 10, 2024) (defining “reforestation” as “the action of renewing forest cover”); see also 16 U.S.C. § 1601(e)(4)(A)(iii) (defining “reforestation” within the meaning of the statute as “the act of renewing tree cover”). The emphasis on renewal in both these definitions distinguishes “reforestation” from “afforestation,” which is focused on the original establishment of trees in a nonforested area. See *supra* notes 78–79 and accompanying text.

for, to borrow the language of the Maryland regulation, a “very long” time.⁸³ The land has ceased to know what it is to be forest.⁸⁴ It may be a backyard or a ballfield or acres of corn. It may be a city block or a college campus or a dried-up streambed. The only thing it cannot be is forest.

D. *An Ideal of Afforestation*

Any tools designed to incentivize afforestation must consider the realities of private property, the difficulty in planting and growing trees, and the necessity of protecting trees both growing and grown. To that end, an ideal afforestation scheme would incorporate and require the following three elements: land acquisition, stewardship, and perpetuity.

Land acquisition means finding suitable land for afforestation and then using that land for afforestation. In the context of regeneration through distributed nature, it also includes finding *enough* land. Land is an obvious necessity. Trees require physical space to grow and thrive.⁸⁵ A focus on land acquisition for afforestation therefore acknowledges that much eligible land is privately owned and seeks to incentivize private landowners to use their lands for afforestation.

Stewardship is a constructive relationship between landowners and the things living on the land. This is necessary because, especially in a world of anthropogenic climate change, trees need help to grow.⁸⁶ One consistent criticism of tree planting plans conducted by corporations or governments is that they count in seeds planted, not trees grown.⁸⁷ Stewardship is also important because, like all members of individual

83. Md. Code Regs. § 15.15.13.02(B)(1).

84. As tacitly acknowledged by Merriam-Webster and the state of Maryland, “afforestation” cannot be limited to establishing tree cover on land that has *never been* forested. When Europeans began arriving on the American continent, one billion of its acres were forested. See Cheever et al., *Forestry*, supra note 58, at 825. Finding land now suitable for tree planting that was *never* forest is therefore difficult.

85. Any plan that involves regenerating nature will necessarily require locking some of that land away for the slow process of natural growth. The reality is that the climate crisis will force certain land-use tradeoffs. See Gerrard, *Time for Triage*, supra note 39, at 38 (arguing humanity must “sacrific[e] some of what we consider precious in order to avoid far worse impacts”). Approaches based on regeneration choose to prioritize (at least in some corners of the law) the natural world. For a critique of this position in the carbon sequestration context, see Matthew Eisenson, *Solar Panels Reduce CO2 Emissions More Per Acre Than Trees—And Much More Than Corn Ethanol*, *Climate L. Blog* (Oct. 25, 2022), <https://blogs.law.columbia.edu/climatechange/2022/10/25/response-to-the-new-york-times-essay-are-there-better-places-to-put-large-solar-farms-than-these-forests/> [https://perma.cc/5HFR-T6A8] (last updated Dec. 18, 2023).

86. Some have argued that expertise is overvalued in conservation work. See Tallamy, supra note 11, at 36. And, indeed, many resources exist for those wishing to use their lands to productively support natural ecosystems. See, e.g., *Native Plant Finder*, Nat’l Wildlife Fed’n, <https://www.nwf.org/nativeplantfinder> [https://perma.cc/46ER-DBYY] (last visited Jan. 13, 2023) (a database that helps people locate native plants to put in their gardens).

87. See supra note 75 and accompanying text.

ecosystems,⁸⁸ certain trees are better suited to certain environments than others.⁸⁹ Therefore, knowledge of the local ecosystem is essential to ensure that the right trees are planted in the right places. In other words, stewardship is a relationship that marries concern for the well being of the land with expertise in the land's care.

Finally, creating an afforestation regime that lasts in perpetuity guarantees that trees planted will have time to grow and will not be destroyed once grown. Legal protections for natural structures are already one of the last things standing between sprawling humanity and finite space. Recognizing *ex ante* that an afforestation effort will last indefinitely gives nature the time and space it needs to regenerate.

E. *An Example*

Picture Ann. Ann lives in an exurb of Philadelphia and owns roughly three acres of land. While she was raising her children, Ann kept the property clear, save for a now-decaying swing set, a fire pit, and a few shrubs. Ann's children are all adults now, and Ann is growing increasingly concerned about global climate change.⁹⁰ Ann has seen a lot of news stories recently about the benefits of tree planting and forests. She has also seen social media posts about the efficacy of small-scale forests.⁹¹ She gets the idea of turning her acreage—limited in size though it may be⁹²—into a forest.⁹³ Ann begins to do some research.

88. See Tallamy, *supra* note 11, at 79, 139 (explaining that, in the context of designing urban ecosystems, “plant choice matters”).

89. *Id.* at 90 (“[P]lants native to the region are almost always far better at performing local ecological roles than plants introduced from somewhere else.”). One exception to this general rule may be oak trees. *Id.* at 144 (relaying that oaks support the food web in eighty-four percent of all U.S. counties where they are present).

90. Concern about global climate change is on the rise. See James Bell, Jacob Poushter, Moira Fagan & Christine Huang, In Response to Climate Change, Citizens in Advanced Economies Are Willing to Alter How They Live and Work, Pew Rsch. Ctr. (Sept. 14, 2021), <https://www.pewresearch.org/global/2021/09/14/in-response-to-climate-change-citizens-in-advanced-economies-are-willing-to-alter-how-they-live-and-work/> [https://perma.cc/42M9-94R4]. In the afforestation context, at least one study has demonstrated that environmental attitudes may be an important factor in private landowners taking afforestation measures on their lands. Roy Brouwer, Nele Lienhoop & Frans Oosterhuis, Incentivizing Afforestation Agreements: Institutional-Economic Conditions and Motivational Drivers, 21 *J. Forest Econ.* 205, 207 (2015).

91. See *supra* note 48 and accompanying text (discussing “tiny forests” and other similar ecosystems).

92. See *supra* notes 52–55 and accompanying text (demonstrating that even small amounts of land can be turned into forest).

93. This is not as far-fetched as it may seem. A Google search for “turn my backyard into a forest” garners over eighty-three million results. Turn My Backyard Into a Forest, Google Search, <https://www.google.com/search?q=turn+my+backyard+into+a+forest> [https://perma.cc/WS3X-M8HD] (last visited Mar. 30, 2024).

II. CURRENT FEDERAL PROGRAMS

Assuming that Ann is serious about planting a forest in her backyard, her research will lead her to the following federal programs.

A. *Internal Revenue Code § 194: Treatment of Reforestation Expenditures*

Internal Revenue Code (“I.R.C.”) § 194, entitled “Treatment of reforestation expenditures,” appears in the Code as a subsection of “Itemized Deductions for Individuals and Corporations.”⁹⁴ Under this section, individuals may deduct up to \$10,000 of qualified reforestation or afforestation expenditures paid in a tax year—including seeding and planting—on a qualified timber property (“QTP”).⁹⁵ A QTP is defined as “woodlots” held by the taxpayer in “significant *commercial* quantities” for “planting, caring for, and *cutting of trees for sale or use in the commercial production of timber products.*”⁹⁶ The Treasury Regulations interpreting this section of the I.R.C. make it abundantly clear that the purpose of these tax incentives is to aid the commercial timber industry.⁹⁷

I.R.C. § 194 is the only federal effort discussed in this Note that makes tree planting its sole objective.⁹⁸ This tax deduction for tree planting is a scheme to be admired. Tree planting may be an expensive proposition,⁹⁹ and compensating individuals for their efforts will be an essential part of any afforestation scheme. Therefore, I.R.C. § 194 is a useful land acquisition tool.¹⁰⁰

But I.R.C. § 194 ultimately fails to provide a successful model for a federal afforestation regime. Although it provides incentive to use land a certain way, it fails to secure the rights to that land for the permanent benefit of the trees planted thereupon. Rather, the very purpose of the tax deduction offered is to incentivize the *cutting* of trees, rather than their steady, protected growth.¹⁰¹ By its very terms, a property will not qualify for

94. I.R.C. § 194 (2018).

95. Id. § 194(a), (b)(1)(B)(i). Different deductions are available to married couples. Id. § 194(b)(1)(B)(ii).

96. Id. § 194(c)(1) (emphasis added).

97. Treas. Reg. § 1.194-3(a) (1983) (“The property must be held by the taxpayer for the growing and cutting of timber which will either be sold for use in, or used by the taxpayer in, the commercial production of timber products.”); see also Andrew Bosserman, Money Grows on Trees: Harvesting Tax Savings Through Timber Sales, 127 J. Tax’n 180, 183 (2017) (discussing tax incentives for the destruction of trees for timber, including I.R.C. § 194).

98. I.R.C. § 194. Although I.R.C. § 194 is concerned with “reforestation” and does not mention “afforestation,” it is included in this Note because it is an important incentive to plant trees within the tax code.

99. See Robbins, *supra* note 56, at 76 (estimating that maintenance and watering costs about eighteen dollars annually per tree).

100. See *supra* section I.D (proposing the values that should underlie successful afforestation schemes). I.R.C. § 194 achieves this goal in a half-sense. While it is not a land-acquisition tool per se, it is a tool that incentivizes a certain *use* of land, which is something.

101. I.R.C. § 194(c)(1).

reimbursement unless the property is dedicated to growing trees for the express purpose of chopping them down.¹⁰² I.R.C. § 194 does not contemplate the intentional planting and careful cultivation of new, longstanding forests. It seeks only harvest. While it provides a helpful incentive for getting seeds in the ground, it contains neither the stewardship nor the perpetuity elements that would characterize a truly useful afforestation tool.¹⁰³

B. *Department of Agriculture Programs*

1. *Conservation Reserve Enhancement Program.* — The Conservation Reserve Enhancement Program (“CREP”) operates through states, tribal governments, or certain nonprofits, private companies, and foundations, which partner with the USDA’s Farm Service Administration (“FSA”) to implement “practices that address high priority conservation and environmental objectives.”¹⁰⁴ The goals of the CREP are the restoration of wildlife habitat, the improvement of grassland productivity, the reduction of soil erosion, the enhancement of air quality, the restoration of wetlands, the conservation of forest, the control of invasive species, and the reduction of floods, among others.¹⁰⁵ Twenty-six of the fifty states have CREP agreements in place.¹⁰⁶

The CREP seeks to improve already existing ecosystems, and eligibility is restricted to active farmland.¹⁰⁷ Eligible landowners who enroll enter into an agreement with the state—or other qualified entity—whereby the development rights on the land are suspended and the landowner receives “an annual rental rate” and other financial benefits.¹⁰⁸ Landowners then

102. Treas. Reg. § 1.194-3.

103. See *supra* section I.D (proposing the parameters of a successful afforestation scheme).

104. Farm Serv. Agency, USDA, Conservation Reserve Enhancement Program 1 (2021), https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/Conservation/PDF/fsa_crep_factsheet_22.pdf [https://perma.cc/WS4R-Q4G8] [hereinafter FSA, CREP Fact Sheet]. In this way, it is distinct from its parent program, the Conservation Reserve Program (CRP), which is wholly administered by the FSA without the aid of the states. Farm Serv. Agency, USDA, Conservation Reserve Program, <https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/> [https://perma.cc/HL2C-MSKW] (last visited Oct. 13, 2022). That said, the two programs are extremely similar.

105. FSA, CREP Fact Sheet, *supra* note 104, at 1.

106. See Farm Serv. Agency, CREP for Producers, USDA, https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-enhancement/crep_for_producers/index [https://perma.cc/9XQN-8QXX] (last visited Oct. 13, 2022) (listing the states with current CREP programs).

107. See FSA, CREP Fact Sheet, *supra* note 104, at 1 (stating that to be eligible, the land must have a “cropping history of four out of the past six years”); see also Arthur W. Allen, The Conservation Reserve Enhancement Program, U.S. Geological Surv. 115, 116 (2005) (“[T]he CREP reflects a vitally needed approach to conservation with a deliberate evolution toward addressing environmental issues on a multi-farm, landscape scale.”).

108. Farm Serv. Agency, What Is the Conservation Reserve Enhancement Program?, USDA, <https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve->

receive assistance instituting practices on their land consistent with the state environmental and conservation goals delineated in the CREP agreement.¹⁰⁹

The CREP shares many of the goals that a strong afforestation tool would have: improvement of habitat, reduction of erosion, enhancement of air and water quality, conservation, and general restoration.¹¹⁰ It employs creative methods to meet those goals, including a rental agreement structure paired with development-rights suspension that neatly ticks the land acquisition box on the individual level.¹¹¹ While it is not singularly concerned with afforestation, CREP projects may include tree planting in their goals or methods.¹¹² And a CREP has the added benefit of being locality-specific, tailored to state-set environmental goals.¹¹³

But the restrictions to the CREP make it a less-than-ideal afforestation tool. Its primary shortcoming is that eligibility is reserved for *working* lands.¹¹⁴ This limitation eliminates an enormous amount of private, nonworking land, hindering the program's ability to fully meet the land acquisition prong. Further, because a CREP is a state-run program, it is limited to only those states that participate. And finally, the average length of a CREP is just a decade or fifteen years.¹¹⁵ This is far short of the perpetual land rights a healthy forest requires.¹¹⁶ Therefore, while the CREP has many admirable qualities,¹¹⁷ it is not an ideal national afforestation tool.

2. *Environmental Quality Incentives and Conservation Stewardship Programs.* — The Environmental Quality Incentives Program (“EQIP”) offers “technical and financial assistance for working lands,” including nonindustrial private forestland.¹¹⁸ Like a CREP, EQIP helps people fund

enhancement/index [https://perma.cc/XRK6-4CPP] (last visited Oct. 13, 2022) [hereinafter FSA, What is CREP?]. CREP agreements vary in lifespan, but the typical contract period is ten to fifteen years. *Id.*

109. See FSA, CREP Fact Sheet, *supra* note 104, at 2.

110. See *id.*

111. See FSA, What is CREP?, *supra* note 108.

112. See Allen, *supra* note 107, at 130 appx. 1 (listing existing CREPs and including many that involve planting trees).

113. See FSA, CREP Fact Sheet, *supra* note 104, at 1.

114. See sources cited *supra* note 107.

115. See FSA, What is CREP?, *supra* note 108.

116. Trees take a long time to grow, and a forest is an ever-evolving ecosystem. See Wohlleben, *supra* note 73, at 31–36 (“The young trees that overcome all obstacles and continue to grow beautifully tall and slender will, however, have their patience tested yet again before another twenty years have passed. . . . The young [trees] . . . must now wait once again . . . [It] can take many decades . . .”).

117. Its pairing of landowners with experts is an admirable example of meeting the stewardship prong, for example.

118. Nat. Res. Conservation Serv., USDA, Environmental Quality Incentives Program (EQIP): Is EQIP Right for Me? 1, <https://www.nrcs.usda.gov/sites/default/files/2022-06/EQIP-Factsheet%20%282%29.pdf> [https://perma.cc/N64A-XQD5] [hereinafter, NRCS, Is EQIP Right for ME?] (last visited Feb. 2, 2024).

conservation projects through a cost-sharing model, with the National Resources Conservation Service (a subdivision of the USDA) offering the technical assistance and the EQIP supplying funds.¹¹⁹ EQIP is for small-scale projects to improve the health of some small segment of working land.¹²⁰ Unlike a CREP, EQIP is administered on individual lands based on the environmental goals of the landowner.¹²¹ An EQIP contract cannot exceed ten years.¹²² The Conservation Stewardship Program (“CSP”) is very similar to EQIP, but it operates on the whole-property level, as opposed to targeting specific projects on a segment of the property.¹²³

Like the CREP, EQIP and CSP are laudable in that they pair private landowners with resources and funding for conservation projects.¹²⁴ All three of these USDA programs go a long way toward meeting the ideal of stewardship: locality-specific expertise paired with private land. And unlike CREP, EQIP and CSP are not shackled by the need for state participation, greatly expanding the amount of land available for their use.

But EQIP and CSP suffer from similar deficiencies to CREP. EQIP and CSP are available only for the owners of working land—specifically, farmers and ranchers—restricting their effectiveness as land acquisition tools.¹²⁵ And, like CREP agreements, EQIP and CSP contracts are limited in duration, and there is nothing in the programs that mandate forests planted during that interval have a home in perpetuity. Although they may—in certain, specific situations—be useful tools for getting trees in the ground, they fall short of the markers of a successful afforestation scheme.¹²⁶

119. See *id.* at 2.

120. See Michael Happ, *Inst. for Agric. & Trade Pol’y, Closed Out: How U.S. Farmers Are Denied Access to Conservation Programs 4* (2021), https://www.iatp.org/sites/default/files/2021-09/Closed%20out%20how%20us%20farmers%20are%20denied%20access%20to%20conservation%20programs_IATP.pdf [<https://perma.cc/4MU7-H7CK>] (“EQIP payments are intended for small, one-off projects like planting grass seed in waterways to prevent erosion . . .”).

121. See NRCS, *Is EQIP Right for ME?*, *supra* note 118, at 2 (describing the process for obtaining EQIP funding, which includes one-on-one consultation with the NRCS to determine the conservation goals and best practices).

122. *Id.*

123. See Nat. Res. Conservation Serv., *Conservation Stewardship Program: Is CSP Right for Me?*, https://www.nrcs.usda.gov/sites/default/files/2022-08/Is%20CSP%20right%20for%20me_0.pdf [<https://perma.cc/LJ46-WSNJ>] (last visited Feb. 2, 2024) [hereinafter *NRCS, Is CSP Right for Me?*] (describing the program); see also Happ, *supra* note 120, at 4 (“CSP is intended to help pay for whole-farm projects, bundling projects together for broader aims like erosion control, water quality or wildlife habitat enhancement.”).

124. See *supra* section II.B.1.

125. See NRCS, *Is EQIP Right for ME?*, *supra* note 118; NRCS, *Is CSP Right for Me?*, *supra* note 123.

126. It should be noted that, among the climate-smart agriculture and forestry mitigation activities listed by NRCS as eligible for conservation incentive contracts are “Tree-Shrub Establishment” that are “plant[ed] for high carbon sequestration rate[s].” Nat’l Res. Conservation Serv., *Climate-Smart Agriculture and Forestry (CSAF) Mitigation Activities*

3. *Forest Stewardship and Healthy Forest Reserve Programs.* — Like the other programs discussed in this section, the Forest Stewardship Program (“FSP”)¹²⁷ has merit but does not ultimately encourage effective afforestation. It is a program primarily concerned with providing resources and education to landowners,¹²⁸ which, while satisfying the stewardship prong, leaves out the all-important land-acquisition prong.¹²⁹ The FSP also relies on the “good faith” of individual landowners and does not appear to have any legally binding perpetuity requirement.¹³⁰ And, like the programs discussed above, the FSP seems largely concerned with the management of existing forest—even if that management includes new planting—and might not extend to the kind of wholesale afforestation project this Note contemplates.¹³¹

To its credit, eligibility for the FSP is broader than the programs discussed above.¹³² But by its own terms, the FSP is less concerned with individual landowners than it is with state- or region-wide forestry practices.¹³³ This posture, which reflects legitimate forestry concerns,¹³⁴ does not target the specific problem identified by this Note: Individual American landowners control the resources needed to effectuate a robust afforestation regime.¹³⁵

Finally, the Healthy Forest Reserve Program (“HFRP”) is perhaps the federal program closest to the ideal afforestation regime this Note

Listfor FY2024, at 3 (2022). But, like trees planted under the other programs discussed, there is nothing that stops the landowner from removing the trees—and destroying their carbon sequestration potential—once the EQIP or CSP expires.

127. USDA, Forest Stewardship Program National Standards and Guidelines (2022) (on file with the *Columbia Law Review*) [hereinafter USDA, FSP Guidelines].

128. See *id.* at 1–3.

129. Funds disbursed under the FSP are typically directed not toward individual landowners but toward state forestry departments. See *id.* at 5 (“The program is funded through an annual appropriation to an expanded budget line item that includes the Cooperative Forestry Assistance Act section 5: Forest Stewardship Program and section 3: Rural Forestry Assistance.”).

130. D. Ramsey Russell, Jr. & Susan Stein, *Planning for Forest Stewardship* 4 (2002).

131. See *id.*; USDA, FSP Guidelines, *supra* note 127, at 4 (listing the FSP’s priorities). In an email exchange shortly before the release of the updated 2022 guidance document, the then-head of the FSP indicated that it would “highlight to role of FSP in afforestation.” See Email from Caroline Kuebler, Manager, Nat’l Forest Stewardship Program, Forest Serv., to Isaac Lunt (Dec. 2, 2022) (on file with the *Columbia Law Review*). The guidance, however, does not mention afforestation. See USDA, FSP Guidelines, *supra* note 127.

132. See USDA, FSP Guidelines, *supra* note 127, at 12.

133. See *id.* at 19 (“[N]ot all forest conservation issues and priorities can be effectively addressed by working with individual landowners at the single parcel level. . . . [T]he [FSP] would benefit being included in multi-stakeholder engagement at the community or landscape level.”).

134. See Tallamy, *supra* note 11, at 38–44 (explaining the importance of forest size and connectivity to the health of creatures living in those forests).

135. See *supra* section I.D.

envisions.¹³⁶ The program offers four enrollment options: a ten-year restoration cost-share agreement, a thirty-year easement, a thirty-year contract (for Tribes only), or a *permanent easement*.¹³⁷ And this program, uniquely among all the programs discussed in this section, explicitly lists “enhanc[ing] carbon sequestration” in its objectives.¹³⁸ This program, better than any of the others so far discussed, satisfies the stewardship and perpetuity prongs. But the HFRP does not actively incentivize planting new trees.¹³⁹ And it therefore falls short of the most important prong of an afforestation schema: land acquisition. For the HFRP is concerned mainly with the restoration, protection, and conservation of *existing* forest. It does not—nor do any of the programs analyzed herein—display the imagination to incorporate, as part of its mission, the protection and conservation of *future* forest.

C. Conservation Easements

Conservation easements have exploded in popularity over the past forty years.¹⁴⁰ They are now, along with mortgages and real covenants, “the most ubiquitous non-possessory interest in land” in the United States.¹⁴¹ According to the best data available, there are, at the time of this writing, over 200,000 conservation easements in the United States, conserving just under forty million acres of land.¹⁴²

Conservation easements are creatures of the I.R.C.¹⁴³ They are a form of tax-deductible charitable donations in which what is donated are land rights.¹⁴⁴ The basic idea behind a conservation easement is straightforward: A landowner transfers a nonpossessory interest in some portion of their land to a qualified entity for a specified purpose over a designated

136. See Nat. Res. Conservation Serv., Healthy Forest Reserve Program—How to Apply and Benefits, USDA, <https://www.nrcs.usda.gov/healthy-forests-reserve-program-how-to-apply-and-benefits> [<https://perma.cc/E8T7-ZBEB>] (last visited Jan. 11, 2023).

137. *Id.*

138. *Id.*

139. *Id.* (stating that the purpose of the program is to “restor[e], enhance[e] and protect[] forestland”); see also Robbins, *supra* note 56, at 85 (“[The HFRP] does not encourage new planting.”).

140. Federico Cheever & Nancy A. McLaughlin, An Introduction to Conservation Easements in the United States: A Simple Concept and a Complicated Mosaic of Law, 1 J. L., Prop. & Soc’y 107, 109 (2015).

141. *Id.* at 110.

142. Nat’l Conservation Easement Database, <https://www.conservationeasement.us/> [<https://perma.cc/YW2E-BRD6>] (last visited Mar. 7, 2024). These data are likely incomplete. The National Conservation Easement Database (NCED) relies on the holders of conservation easements—usually land trusts—to voluntarily report their holdings to the database. Cheever & McLaughlin, *supra* note 140, at 110 n.5 (explaining this problem).

143. I.R.C. § 170(h); see also Cheever & McLaughlin, *supra* note 140, at 117 (“In 1980 . . . Congress made the conservation easement deduction provision a permanent part of the [I.R.C.]”).

144. I.R.C. § 170(h).

period in exchange for a tax benefit.¹⁴⁵ The landowner forgoes the right to develop or otherwise use that land, and the conservation easement holder maintains the land in accordance with the terms of the easement.¹⁴⁶

I.R.C. § 170(h), along with its interpretation in the Treasury Regulations, set forth the requirements the donation of a conservation easement must meet in order to be deductible.¹⁴⁷ The land must be donated in perpetuity,¹⁴⁸ the donation must be made to a qualifying entity,¹⁴⁹ and the land in question must be donated for “conservation purposes.”¹⁵⁰ Qualifying purposes are: habitat protection, preservation of open space (including forestland), historic preservation, and preservation of recreational opportunity.¹⁵¹ The “extensive” Treasury Regulations (“Regulations”) interpreting I.R.C. § 170(h) elaborate on these conservation purposes.¹⁵² While a complete catalogue and analysis of these Regulations is beyond the scope of this Note, there are a few things worth discussing.

First, the Regulations acknowledge that human-made natural structures—dams, for example—may be worthy of preservation through a

145. See Cheever & McLaughlin, *supra* note 140, at 111–12. This is a simplified account. As Professors Federico Cheever and Nancy McLaughlin point out, conservation easements can take on a variety of forms under various state and federal laws. *Id.* But as this Note is concerned with the basic instrument—and the federal tax code that creates it—its discussion is cabined to the standard form of conservation easements.

146. See *id.* This is, of course, subject to significant complication and variance. Conservation easements may take various forms, be subject to a variety of state, federal, or tribal laws, and have specifics in the easement regarding land management plans, development rights, and other details. In this way, conservation easements straddle the line dividing active land management and perpetual conservation. See *id.*

147. I.R.C. § 170(h); Treas. Reg. § 1.170A-14 (2023).

148. I.R.C. § 170(h)(5)(A). The perpetuity requirement has been the subject of considerable debate, with some scholars calling for its outright abolition. See, e.g., Zachary Bray, *Reconciling Development and Natural Beauty: The Promise and Dilemma of Conservation Easements*, 34 *Harv. Env't L. Rev.* 119, 137–38 (describing the criticism of the perpetuity requirement). The perpetuity requirement draws special attention when it comes to climate change. See generally Jessica Owley, Federico Cheever, Adena R. Rissman, M. Rebecca Shaw, Barton H. Thompson, Jr. & W. William Weeks, *Climate Change Challenges for Land Conservation: Rethinking Conservation Easements, Strategies, and Tools*, 95 *Denv. L. Rev.* 727 (2018) (discussing the need for more flexible conservation easement structures in the context of climate change). The perpetuity requirement has also been the subject of litigation. See Cheever & McLaughlin, *supra* note 140, at 130–32 (collecting and describing these cases).

149. I.R.C. § 170(h)(3). Qualifying entities are typically governments or publicly supported charitable organizations. *Id.* Land trusts are common recipients of conservation easement donations. Cheever & McLaughlin, *supra* note 140, at 109.

150. I.R.C. § 170(h).

151. *Id.* § 170(h)(4)(A)(i)–(iv).

152. Treas. Reg. § 1.170A-14; Cheever & McLaughlin, *supra* note 140, at 121 (describing the Treasury Regulations interpreting I.R.C. § 170(h) as “extensive”).

conservation easement.¹⁵³ Second, the Regulations specify that I.R.C. § 170(h) is satisfied if the conservation serves a “significant public benefit,”¹⁵⁴ which would seem to broaden the scope of what may be considered worthy of conservation.¹⁵⁵ Third, there is tacit acknowledgement within the Regulations of the difficulty in defining its own terms.¹⁵⁶ And finally, the Regulations specifically attempt to strike a balance between competing conservation purposes, recognizing in the process that conservation is not static and may carry within it certain contradictions.¹⁵⁷

There are multiple areas of the tax code implicated by conservation easement donations—income, estate, and capital gains¹⁵⁸—but this Note focuses on the income tax deduction under I.R.C. § 170(h). Under that section, a donor of a conservation easement is eligible for a deduction equal to the fair market value of the easement.¹⁵⁹ This deduction can be

153. See Treas. Reg. § 1.170A-14(d)(3)(i) (“The preservation of a lake formed by a man-made dam or a salt pond formed by a man-made dike would meet the conservation purposes test if the lake or pond were a natural feeding area for a wildlife community that included rare, endangered, or threatened native species.”). This is particularly relevant to this Note, which argues that man-made natural structures (forests) should qualify for tax benefits under I.R.C. § 170(h).

154. Treas. Reg. § 1.170A-14(d)(4)(iv).

155. See *infra* section III.C.3.

156. The Regulations take a distinctly preservation-based tack to work out this thorny problem. See *infra* note 182. Nonetheless, there is an apparent struggle to reel in what it means to have a “conservation purpose” or provide a “significant public benefit.” For a charming example, see Treas. Reg. § 1.170A-14(d)(4)(ii), which states that “scenic enjoyment” (a subsection of “preservation of open space”) may be satisfied by “[t]he harmonious variety of shapes and textures” of a landscape. *Id.* § 1.170A-14(d)(A)(ii)(5).

157. See *id.* § 1.170A-14(e)(2), (3). Section (e)(2), “Inconsistent Use” explains that deductions will not be permitted where one “enumerated conservation purpose[]” would be accomplished at the expense of another. *Id.* § 1.170A-14(e)(2). The Regulation demonstrates this conflict by considering an example in which farmland is preserved pursuant to a state flood-control program. *Id.* This preservation would seem to qualify under the terms of § 1.170A-14(d)(4)(iv)(4). But this preservation would cease to be tax-deductible if, in order to accomplish that farmland preservation, a “naturally occurring ecosystem” was damaged by the use of pesticides on that farm. *Id.* But the next section, titled “Inconsistent Use Permitted,” explains that damage to one conservation purpose will be permitted if the damaging action is “necessary” to protect the conservation purpose for which the donation was made. *Id.* The Regulations explain this point through the example of an easement which is donated to preserve an archeological site. *Id.* A deduction will still be permitted, in the example, even if excavation of that site, “consistent with sound archaeological practices . . . impair[s] a scenic view.” *Id.* Sections (e)(2) and (e)(3) are prime examples of the complexity of conservation. In a world in which different interests compete for limited land, value judgments must be made.

158. For a comprehensive overview of those areas, see generally, Elliott G. Wolf, Note, Simultaneously Waste and Wasted Opportunity: The Inequality of Federal Tax Incentives for Conservation Easement Donations, 31 *Stan. Env’t L.J.* 101, 103–05 (2012) (providing an overview of the federal tax incentives available for conservation easement donation).

159. Treas. Reg. § 1.170A-14(h)(1). The distinction between the IRS’s focus on valuing the forgone *development* right and the gained *conservation* values is important and has been the subject of scholarly comment. See, e.g., Nancy A. McLaughlin, Increasing the Tax

extended for up to fifteen additional years if the donation is worth more than fifty percent of the donor's income.¹⁶⁰ In assessing the "fair market value" of the easement, donating taxpayers and their appraisers employ multiple methods.¹⁶¹ One of the most common valuation methods for conservation easement donations is the "before and after" method.¹⁶²

This method involves two value calculations: the value of the donated property immediately preceding the donation and the value after the donation.¹⁶³ Calculating the prior value (the "before-value") involves a determination of the donated land's highest and best use ("HBU").¹⁶⁴ This typically involves determining what development rights would be available to the owner of the land, the legal and financial feasibility of exercising those rights, and the value of the property should those rights be exercised.¹⁶⁵ This is a tricky, and often contested, calculation.¹⁶⁶ Once conducted, the value of the land after donation (the "after-value"¹⁶⁷) is calculated. This calculation involves determining what development rights are retained by the taxpayer donor and valuing those in relation to the HBU.¹⁶⁸ The total value of the easement is the difference between these two values.¹⁶⁹ This valuation method puts emphasis on economic value *lost* from the encumbrance rather than on other value (e.g., public good, conservation value) *gained* from the donation of the easement.

There are many problems with conservation easements as they currently operate. They are difficult to monitor, which can lead to abuse.¹⁷⁰

Incentives for Conservation Easement Donations—A Reasonable Approach, 31 *Ecology L.Q.* 1, 71 (2004) [hereinafter McLaughlin, Donations] (examining the shortcomings of the IRS's valuation scheme for conservation easement donations). This issue is addressed *infra* section III.C.4.

160. See Wolf, *supra* note 158, at 103–04 (describing the "carry-forward" provision of I.R.C. § 170(b)(1)(E)(ii) (2022) as it relates to conservation easements); see also *id.* at 104 n.10 for a helpful example.

161. See Nancy A. McLaughlin, Conservation Easements and the Valuation Conundrum, 19 *Fla. Tax Rev.* 225, 231–46 (2016) [hereinafter McLaughlin, Valuation] (explaining and analyzing these methods).

162. *Id.* at 230, 232.

163. *Id.* at 232–33.

164. *Id.* at 233.

165. See *id.* & nn.27–34 (collecting definitions of highest and best use from various Tax Court decisions).

166. See *id.* at app. C at 312–13 (collecting IRS enforcement actions against overvalued conservation easements).

167. *Id.* at 235.

168. *Id.* at 234–35.

169. Treas. Reg. § 1.170A-14(h)(3) (2023) "[A]s a general rule . . . the fair market value of a perpetual conservation restriction is equal to the difference between the fair market value of the property it encumbers before the granting of the restriction and the fair market value of the encumbered property after the granting of the restriction."

170. See Cheever & McLaughlin, *supra* note 140, at 125–26 (describing this abuse).

They may feel inaccessible for certain individuals.¹⁷¹ Or their specific requirements—especially the requirement of perpetuity—may be controversial.¹⁷² To that end, there has been no shortage of suggestions for reform.¹⁷³

Even with these problems, however, conservation easements may at first appear to be the perfect afforestation tool. They model an ideal balance of land acquisition, stewardship, and perpetuity: They compensate private landowners for perpetual donation of land to an entity dedicated to overseeing that conservation is carried out on that land. And yet for afforestation, there is one glaring problem: A conservation easement cannot be placed on land that has only *future* conservation value.¹⁷⁴ In other words, the conservation easement is designed only to preserve land in its current state based on its current conservation value, not to set that land aside for the regeneration of natural ecosystems like forests.

171. See, e.g., McLaughlin, Donations, *supra* note 159, at 99–100 (discussing how the income-based tax incentive structure of conservation easements leaves out individuals who may have land to donate but incomes too low to make it worthwhile).

172. See Bray, *supra* note 148, at 137; Nancy A. McLaughlin, Rethinking the Perpetual Nature of Conservation Easements, 29 Harv. Env't L. Rev. 421, 424 (2005) (explaining why the perpetuity requirement is controversial); Owley et al., *supra* note 148, at 729–30 (examining the challenge of “balancing flexibility and permanence” in the context of conservation and climate change).

173. For a small sample of the articles that have been written about reforming conservation easement law in the climate change context, see, e.g., Daniel L. Aaronson & Michael B. Manuel, Conservation Easements and Climate Change, Sustainable Dev. L. & Pol'y, Winter 2008, at 27, 27 (pointing out that “the current law of conservation easements does not recognize the full potential for carbon capture resulting from land conservation”); see also Jessica E. Jay, Opportunities for Reform and Reimagining in Conservation Easement and Land Use Law: A To-Do List for Sustainable, Perpetual Land Conservation, 46 Vt. L. Rev. 387, 390–419 (2022) (suggesting reforms); James L. Olmstead, Carbon Dieting: Latent Ancillary Rights to Carbon Offsets in Conservation Easements, 29 J. Land, Res. & Env't L. 121, 134–41 (2009) (discussing the complexity of conservation easements in the context of California's carbon offset market); Owley et al., *supra* note 148, at 730–37 (discussing climate change's potential impact on conservation easements); Jess R. Phelps & David P. Hoffer, California Carbon Offsets and Working Forest Conservation Easements, 38 UCLA J. Env't L. & Pol'y 61, 63 (2020) (discussing the interaction of working forest conservation easements and carbon markets). This is only a small sample of the many articles that have examined conservation easements and their potential role in combating climate change.

One solution that deserves special attention is Professors Cheever and Owley's suggestion that the law should embrace options to purchase conservation easements (OPECs), which would allow entities to set aside land for future conservation on the condition that certain events occur (e.g., the migration of a bird species to that area). See Federico Cheever & Jessica Owley, Enhancing Conservation Options: An Argument for Statutory Recognition of Options to Purchase Conservation Easements (OPECs), 40 Harv. Env't L. Rev. 1, 5 (2016). This idea embraces the future conservation this Note finds valuable and would provide one additional alternative method to creating the afforestation easement discussed here. See *infra* section III.C.

174. But see *infra* notes 222–226 and accompanying text (arguing that, potentially, it can be).

D. *Ann Is Stuck*

After reviewing those federal programs that seem, directly or indirectly, to be targeted at helping her plant her backyard forest (and, although she may not recognize it, becoming part of an early distributed nature effort), Ann is frustrated. She thought she had found a good thing in I.R.C. § 194 but does not want to cut down her trees.¹⁷⁵ She liked the idea of getting help from an expert through the CREP, EQIP, or CSP, but hers is not working land.¹⁷⁶ She cannot understand why the FSP and HFRP do not encourage new planting.¹⁷⁷ She got excited when she found conservation easements, but as she explored more deeply, she realized that no land trust would accept the donation of a backyard, no matter how large, with no current conservation value on the promise that one day it would acquire conservation value. She has now exhausted her options and her tolerance for reading the Treasury Regulations. Ann needs a new tool.

III. THE AFFORESTATION EASEMENT

A. *Conservation Easements as a Model for an Afforestation Tool*

Of all the tax incentives and federal programs thus far discussed, the conservation easement provides the best model for a holistic afforestation tool.¹⁷⁸ The very purpose of the conservation easement is land acquisition for conservation. By providing a financial incentive, conservation easements meet the problem of private property head on. And they have been remarkably successful in getting private landowners to donate, forever, their land rights, adding vast stocks of previously private land to the public conservation effort.¹⁷⁹ Perpetuity is *built into* the I.R.C. and the Treasury Regulations.¹⁸⁰ And the qualified entities to receive the donation are, theoretically, governments or trusts whose job it is to oversee the

175. See *supra* section II.A.

176. See *supra* sections II.B.1–2.

177. See *supra* section II.B.3.

178. One prominent scholar of conservation easements has suggested that reform of the tool should focus on “[c]hanging the framework of conservation easements to make them more active sites of conservation work” and states, “it may be . . . desirable to enable holders [of conservation easements] to *restore* degraded habitat, *relocate* species to or from the land, or *remove* invasive flora and fauna.” Jessica Owley & David Takacs, Flexible Conservation in Uncertain Times, in *Contemporary Issues in Climate Change Law and Policy: Essays Inspired by the IPCC 65, 83* (Robin Kundis Craig & Stephen R. Miller eds., 2016) (emphasis added). In other words, experts are already thinking of the benefits of changing the nature of conservation easements from negative to affirmative. *Id.* at 82–83.

179. See Nat’l Conservation Easement Database, *supra* note 142 (showing that much acreage is already held as conservation easements).

180. I.R.C. § 170(h)(2)(C) (2023); Treas. Reg. § 1.170A-14(b)(2) (2023).

stewardship of the land.¹⁸¹ Land acquisition, stewardship, perpetuity: check, check, check.

The problem with conservation easements as they pertain to afforestation is that they are focused on preservation rather than regeneration.¹⁸² What this Note calls future conservation—the potential to grow something worth conserving on land that is not, in its present state, worth conserving—is absent from the list of conservation purposes delineated in the Regulations.¹⁸³ And while there is an argument to be made that the donation of, say, a backyard for the purpose of growing a permanent forest meets the letter of the Regulations—and, if not the letter, the spirit—it is a creative one, unlikely to convince many judges.¹⁸⁴

What is needed is a new tool, drawn from the model of the conservation easement but embodying a philosophy that recognizes the imperative to acquire land for the creation and preservation of new nature, new forests.

B. *A Philosophical Shift*

Early thinkers in the American conservation movement were more focused on preservation than restoration.¹⁸⁵ Indeed, the high water mark of American conservation—the Progressive Era creation of the National Parks—represented a distinct commitment to this philosophy of

181. Treas. Reg § 1.170A-14(c). Land Trusts do not always meet these standards. See Owley & Takacs, *supra* note 178, at 83 (“Most land trusts . . . are not well equipped currently to undertake active land management.”).

182. By its plain language, § 170(h) is concerned with preservation and protection, not restoration or rehabilitation. See I.R.C § 170(h)(4)(A)(i) (“[T]he *preservation* of land areas for outdoor recreation . . .” (emphasis added)); *id.* § 170(h)(4)(A)(ii) (“[T]he *protection* of a relatively natural habitat . . .” (emphasis added)); *id.* § 170(h)(4)(A)(iii) (“[T]he *preservation* of open space (including farmland and forest land) where such *preservation* is [for scenic enjoyment or pursuant to a governmental purpose] . . .” (emphasis added)); *id.* § 170(h)(4)(A)(iv) (“[T]he *preservation* of an historically important land area or a certified historic structure.” (emphasis added)). This is also true of the Treasury Regulations interpreting § 170(h). See Treas. Reg. § 1.170A-14(d)(1)(i) (“The *preservation* of land areas for outdoor recreation . . .” (emphasis added)); *id.* § 1.170A-14(d)(1)(ii) (“The *protection* of relatively natural habitat . . .” (emphasis added)); *id.* § 1.170A-14(d)(1)(iii) (“The *preservation* of certain open space . . .” (emphasis added)); *id.* § 1.170A-14(d)(1)(iv) (“The *preservation* of historically important land area . . .” (emphasis added)).

183. See Treas. Reg. § 1.170A-14(d).

184. See *infra* section III.C.3 (weighing the argument that the afforestation easement could arguably be found in the existing law).

185. See, e.g., George Catlin, An Artist Proposes a National Park, *in* Nash, *The American Environment*, *supra* note 1, at 5, 7 (“[E]ven in the overwhelming march of civilised improvements and refinements do we love to cherish [beautiful parts of nature’s] existence, and lend our efforts to *preserve* them in their primitive rudeness.” (emphasis added)); Frederick Law Olmsted, The Value and Care of Parks, *in* Nash, *The American Environment*, *supra*, at 18, 23 (“The first point to be kept in mind then is the *preservation* and maintenance *as exactly as is possible* of the natural scenery . . .” (emphasis added)).

conservation as preservation.¹⁸⁶ But there have also long been voices that acknowledged the twin component of *restoration* in conservation philosophy.¹⁸⁷ And in the era of growing alarm over global climate change, thinkers have come to acknowledge that humanity has a unique responsibility to restore—as well as to continue to protect—the natural world.¹⁸⁸

There is a tension between preservation and restoration. To preserve something means to leave it be,¹⁸⁹ while restoration implies a kind of change.¹⁹⁰ Dictionary definitions of *conservation* tend to attempt to strike a balance between these two dichotomous concepts.¹⁹¹ And both ideas of conservation—as preservation and as restoration—have found their way into American law.¹⁹² The word *conservation*, therefore, while connoting

186. For example, Teddy Roosevelt said, famously, of the Grand Canyon, “Leave it as it is.” See Theodore Roosevelt Quotes, Nat’l Park Serv., <https://www.nps.gov/thro/learn/historyculture/theodore-roosevelt-quotes.htm> [<https://perma.cc/8BZN-A8NA>] (last visited Jan. 12, 2023).

187. See, e.g., George Perkins Marsh, Man’s Responsibility for the Land, *in* Nash, *The American Environment*, supra note 1, at 13, 17 (“Could this old world[,] [the natural world], which man has overthrown, be rebuilt [sic], could human cunning rescue its wasted hillsides and its deserted plains from solitude or mere nomad occupation, from barrenness, from nakedness, and from insalubrity, and restore the ancient fertility and healthfulness . . .”).

188. See supra notes 11–14 and accompanying text.

189. See Preserve, Oxford English Dictionary, https://www.oed.com/dictionary/preserve_v?tab=meaning_and_use#28617734 (on file with the *Columbia Law Review*) (last modified Sept. 2023) (including in its definitions both “[t]o protect” and “[t]o keep in its original or existing state”).

190. See Restore, Oxford English Dictionary, https://www.oed.com/dictionary/restore_v1 (on file with the *Columbia Law Review*) (last modified Sept. 2023) (including in its definitions “[t]o set right or repair” and “[t]o bring back to a previous . . . condition”). This is especially true in the case of something like afforestation, which “restores” an environment to a state it has not inhabited in a long time, rather than, say, “restoration” of a leaky roof, which changes the nature of the roof from leaking to not leaking but leaves it, fundamentally, a roof.

191. National Geographic’s resource library defines “conservation” as “the act of protecting Earth’s natural resources for current and future generations.” Conservation, Nat’l Geographic, <https://education.nationalgeographic.org/resource/conservation-encyclopedia/> [<https://perma.cc/L5MB-4A55>] (last visited Jan. 11, 2023). And the Oxford English Dictionary (OED) provides several definitions, including “[a] [t]he action or process of conserving; preservation of life, health, perfection, etc.; (also) preservation from destructive influences, natural decay, or waste[,]” “[b] Preservation of existing conditions, institutions, rights, peace, order, etc.[]” and “[e] [t]he preservation, protection, or restoration of the natural environment and of wildlife; the practice of seeking to prevent the wasteful use of a resource in order to ensure its continuing availability.” Conservation, Oxford English Dictionary, <https://www.oed.com/view/Entry/39564?redirectedFrom=conservation#eid> (on file with the *Columbia Law Review*) (emphasis added) (last modified Sept. 2023).

192. Title 16 of the United States Code—helpfully entitled “Conservation”—contains many subsections and sub-definitions of the term “conservation,” many of which strike the balance between preservation and restoration indicated by the dictionary definitions listed above. See 16 U.S.C. § 1362(2) (2018) (“The terms ‘conservation’ and ‘management’ mean the collection and application of biological information for the purposes of increasing and

something like *preservation* or *protection* in contemporary parlance, seems to include within it an understanding that to conserve sometimes means to change.

This understanding, however, appears not to have been incorporated into those parts of the I.R.C. and Treasury Regulations that gave rise to the modern conservation easement.¹⁹³ Those portions of American law enshrine only the static, preservation-based definition of “conservation.” Conservation easements, while sometimes allowing for certain restorative

maintaining the number of animals within species and populations of marine mammals at their optimum sustainable population. Such terms include . . . habitat acquisition and improvement.”); id. § 1532(3) (“The term[] . . . ‘conservation’ mean[s] . . . the use of all methods . . . which are necessary to bring any endangered [or threatened] species to the point at which the measures provided pursuant to this chapter are no longer necessary. Such methods and procedures include . . . habitat acquisition and maintenance, propagation, live trapping, and transplantation . . .”); id. § 1802(5) (“The term ‘conservation and management’ refers to all of the rules, regulations, conditions, methods, and other measures (A) which are required to *rebuild, restore, or maintain*, and which are useful in rebuilding, restoring, or maintaining, any fishery resource and the marine environment . . .” (emphasis added)); id. § 3743(1) (“The terms ‘conserve’ and ‘conservation’ mean to use, and the use of, such methods and procedures which are necessary to ensure, to the maximum extent practicable, the well being and enhancement of fish and wildlife and their habitats . . . [including] habitat acquisition, maintenance, [and] development . . .”); id. § 4263(2) (“The term ‘conservation’ means the use of methods and procedures necessary . . . including all activities associated with scientific resource management, such as conservation, protection, restoration, acquisition, and management of habitat . . .”); id. § 5102(4) (“The term ‘conservation’ means the *restoring, rebuilding,* and maintaining of any coastal fishery resource and the marine environment, in order to assure the availability of coastal fishery resources on a long-term basis.” (emphasis added)); id. § 6103(3) (“The term ‘conservation’ means the use of methods and procedures necessary . . . [including] maintenance, management, protection, and restoration of neotropical migratory bird habitat . . .”); id. § 6302(2) (“The term ‘conservation’ . . . means the use of methods and procedures necessary to prevent the diminution of, and to sustain viable populations of, a species; and . . . includes all activities associated with wildlife management, such as . . . conservation, protection, restoration, acquisition, and management of habitat . . .”); id. § 6415(4) (“The term ‘conservation’ means the use of methods and procedures necessary to preserve or sustain native corals and associated species as diverse, viable, and self-perpetuating coral reef ecosystems, including all activities associated with resource management, such as assessment, conservation, protection, restoration, sustainable use, and management of habitat . . .”); 16 U.S.C.A § 669a(1) (West 2019) (“[T]he term ‘conservation’ means the use of methods and procedures necessary or desirable to sustain healthy populations of wildlife, including . . . improvement and management of habitat . . .”); § 6602 (“The term ‘conservation’ means the use of all methods and procedures necessary to protect marine turtles, freshwater turtles, and tortoises, and their habitats . . . [including] protection, restoration, and management of habitats . . .”). This lengthy sampling represents only a small fraction of the definitions of “conservation” that surely stretch across statutes, regulations, and court decisions. Fascinatingly, there is a snake-eating-its-tail element to some of them, wherein the word “conservation” is itself used, alongside words like “preservation,” within a definition of “conservation” for the purposes of the statute. See, e.g., 16 U.S.C. § 4263(2).

193. See supra note 182.

practices to be conducted on donated land,¹⁹⁴ are fundamentally concerned with restricting development in order to leave land unchanged.¹⁹⁵ Land donated as a conservation easement is intended to be preserved, not reinvented.

And neither of these definitions—and none of the statutory frameworks outlined herein—go so far as to include in the definition of conservation the generation of *new* nature. For those who include restoration in their idea of conservation, planting new trees in an area that recently had many of its trees felled may look like conservation. But it is difficult to imagine that most people would seriously consider, say, turning a backyard into a forest to be “conservation” in the pure sense. The backyard is destroyed, and something new—not something “conserved”—is put in its place. Yet this is precisely the kind of practice this Note argues must be included in a holistic, effective definition of conservation in a time of global climate change. In order to truly restore the natural world to a state of relative health, drastic actions must be taken to put new nature—in this case, trees—in the ground.¹⁹⁶ These actions should therefore be considered restorative or conservational in the broad sense, even if they are not so in the traditional sense. For although they involve making immediate changes to specific landscapes and properties that are not themselves worthy of conservation—like backyards—they contribute to an overall restoration that will help conserve life on the planet. Therefore, this Note proposes certain changes to the I.R.C. and the Treasury Regulations that suggest that, within the context of conservation easements, “conservation” should embrace the notion that land can be set aside *in order to be changed*.¹⁹⁷

C. *Building the Afforestation Easement*

1. *The Statutory Approach*. — Afforestation itself could be added as a statutorily recognized conservation purpose under the I.R.C.¹⁹⁸ This

194. See, e.g., Brenda Lind, Using Conservation Easements to Protect Working Forests, *Land Tr. All. Exch.*, Spring 2001, at 10, 11. But see Owley & Takacs, *supra* note 178, at 82–83 (describing the negative nature of conservation easements and explaining that, often, no activity is allowed on land donated as a conservation easement).

195. See *supra* section II.C.

196. See Tallamy, *supra* note 11, at 25–26.

197. This Note does not suggest abandoning the traditional definition of conservation in its entirety, of course. Even within the context of the afforestation easement, this Note suggests that once land is set aside for afforestation, it should be protected negatively along traditional lines. See *infra* section III.C.

198. See I.R.C. § 170(h)(4) (2018). Others have suggested amending the I.R.C. to encompass conservation purposes that are tangential to afforestation and, if adopted, could be argued to enable the afforestation easement. See Jay, *supra* note 173, at 401–02 (suggesting updating the I.R.C. and Treasury Regulations to include, among other things, carbon sequestration, interconnecting trail corridors, and forestry working land, all of which could, if adopted, lead to a more positive afforestation regime); see also Aaronson & Manuel, *supra* note 173, at 28 (suggesting carbon capture should be a legitimate

could be accomplished with a relatively simple amendment to I.R.C. § 170(h)(4),¹⁹⁹ which lists the four legitimate conservation purposes. The new § 170(h)(4)(v)²⁰⁰ could read something like, “*active afforestation and subsequent maintenance of newly forested land.*” This simple addition would clarify that afforestation is a legitimate, deductible conservation purpose under the I.R.C. Because this would legalize the practice of donating land for future afforestation, this addition to the I.R.C. would take care of the land-acquisition prong.

The stewardship prong would require subsequent changes to the I.R.C. Because it would be unwise to allow donations of, and therefore tax breaks for, to take the earlier example, backyards to land trusts lacking the expertise and resources to ensure that the afforestation program is implemented and monitored,²⁰¹ it is sensible to restrict qualified recipients of afforestation easement donations to entities that can prove they have the requisite resources and expertise to oversee a robust afforestation scheme on a property.²⁰² This could be codified by adding language to I.R.C. § 170(h)(3), which lists the organizations qualified to accept a donation,²⁰³ clarifying that “*in the case of donations made under § 170(h)(4)(v)*” any government, tribe, nonprofit, or private organization accepting the donation of an afforestation easement must prove to the IRS that it has the funds and knowledge necessary to successfully plant, grow, and maintain the new forest.²⁰⁴

The perpetuity prong is built into the I.R.C. as it is currently drafted,²⁰⁵ but certain changes to § 170(h)(2) (defining “qualified property interest”), would ensure that the confusion between perpetuity and afforestation²⁰⁶ is clarified in the Code. Specifically, § 170(h)(2)(C)

conservation purpose under the I.R.C.). In line with its broader argument that conservation should include the growth of new nature, this Note takes the more direct step of suggesting afforestation be considered, in and of itself, a legitimate conservation purpose.

199. I.R.C. § 170(h)(4).

200. Suggested sections and language are in italics.

201. See Owley & Takacs, *supra* note 178, at 83 (explaining that land trusts often lack resources). Conservation easements in their current form are already vulnerable to fraud, misrepresentation, and a failure to keep land in accordance with the stated conservation purpose. See McLaughlin, *Valuation*, *supra* note 161, at 227.

202. By “robust afforestation scheme,” this Note means one that is in line with local conditions and plant selection. See Tallamy, *supra* note 11, at 89. Any successful afforestation effort in the United States will likely also involve the hiring and training of more federal, state, and local foresters with a focus on restoration rather than on wood processing. See Occupational Employment and Wage Statistics, May 2022: 19-1032 Foresters, U.S. Bureau of Lab. Stats., <https://www.bls.gov/oes/current/oes191032.htm> [<https://perma.cc/ZY2B-76F6>] (last modified Apr. 25, 2023) (estimating that there are fewer than ten thousand foresters in the United States).

203. I.R.C. § 170(h)(3).

204. This would eventually lead to meeting the stewardship prong.

205. I.R.C. § 170(h)(2)(C).

206. Again, in the traditional sense, it is difficult to say that land being actively afforested is being conserved “in perpetuity” because the land itself is being changed. Perpetuity here

could be amended to read: “a restriction, *or, in the case of donations made under subsection (h)(4)(v), an affirmative obligation* (granted or imposed in perpetuity) on the use which may be made of the real property.”²⁰⁷ This addition would ensure (1) that it is understood that the afforestation easement is a legitimate property interest and (2) that the affirmative duty to plant, grow, and maintain the forest is donated—like traditional restrictions—in perpetuity.

All of these statutory changes would likely need to be supplemented by interpretations in the Treasury Regulations that would clarify how qualifying organizations would prove their trustworthiness, how the suitability of land for afforestation would be determined, what duties would be inherent in such a donation, how such donations would be monitored, and so on. Drafting these extensive regulations is beyond the scope of this Note, which is focused on how the afforestation easement could be initially created in law. But doubtless the Department of the Treasury (“Treasury”), should it have the opportunity to do so, would want to draft these regulations with an eye toward the three pillars of a successful afforestation instrument—land acquisition, stewardship, and perpetuity—outlined above.

2. *The Regulatory Approach.* — Even without direct statutory language creating the afforestation easement, one could be created through the Treasury Regulations interpreting I.R.C. § 170(h) as it already stands.²⁰⁸ Again, these regulations would need to be drafted with an eye toward the three pillars of afforestation.

Like the approach in the previous section, language could be added to Treasury Regulation § 1.170A-14(d)(1), which lays out the valid conservation purposes for which easements can be donated,²⁰⁹ to create the afforestation easement. This new subsection—Treasury Regulation § 1.170A-14(d)(1)(v)—could mirror the statutory language proposed above: “*the active afforestation and subsequent maintenance of newly forested land.*”²¹⁰ This simple addition would create the afforestation easement and therefore satisfy the land acquisition prong.

But the Treasury Regulations differ from the I.R.C. in that they are far more detailed, providing long explanations for each of the listed

refers to leaving the land be for the purposes of growing forest, which is different from the traditional understanding, which is leaving the land be entirely.

207. I.R.C. § 170(h)(2)(C).

208. Of course, this approach has its dangers, especially given the current Supreme Court’s apparent hostility to agency actions. See *West Virginia v. Env’t Prot. Agency*, 142 S. Ct. 2578, 2609–10 (2022) (indicating that the so-called “major questions doctrine” may become a tool by which courts can nullify agency actions).

209. Treas. Reg. § 1.170A-14(d)(1) (2023).

210. See *supra* section III.C.1. This mirroring would be in line with the current structure of the Treasury Regulations, which, in this subsection, mirror the language of the I.R.C. Compare I.R.C. § 170(h)(4), with Treas. Reg. § 1.170A-14(d)(1).

conservation purposes.²¹¹ If Treasury promulgated new regulations and added the afforestation easement under § 1.170A-14(d)(1), it would likely expand upon that creation by issuing further guidance under a hypothetical § 1.170A-14(d)(6). Here, Treasury would have ample opportunity to spell out what ought to be required of afforestation easements, from the three pillars discussed above²¹² to further ideal requirements, such as native tree requirements,²¹³ corridor requirements,²¹⁴ area requirements,²¹⁵ numerosity, height, and cover requirements,²¹⁶ maintenance requirements,²¹⁷ enforcement requirements, and any others it might think necessary to protect the integrity of the afforestation easement. *Section 1.170A-14(d)(6)* would serve as guidance on what it means to afforest, as protection against monocultures hastily planted to claim a tax benefit, and as justification for strong enforcement measures.

Section 1.170A-14(d)(6) could go a long way toward ensuring that stewardship and perpetuity are ensured, but there are also specific existing regulatory sections in which these two concerns could be addressed as well. In the case of stewardship, Treasury could add a new subsection to § 1.170A-14(c)(1) clarifying the requirements for an eligible donee of an afforestation easement.²¹⁸ Similarly, Treasury could add language to the definition of “perpetuity” in the case of afforestation easements to § 1.170A-14(b), explaining that while the donated land will not be retained in its current state in perpetuity, the new forest will be.²¹⁹

3. *The Litigation Approach.* — There is also an argument to be made that the afforestation easement already exists within the current contours of the I.R.C. and Treasury Regulations, and that citizens could begin donating land that is not forested for the purpose of afforestation.²²⁰ This would represent a novel approach to conservation easements and would

211. See Treas. Reg. § 1.170A-14(d)(2)–(5).

212. See *supra* section I.D.

213. See Tallamy, *supra* note 11, at 89.

214. See *id.* at 41 (explaining that the larger and more connected our manmade natural ecosystems, the better).

215. See *supra* note 85 and accompanying text.

216. See *supra* note 54–56 and accompanying text.

217. See *supra* notes 86–89 and accompanying text.

218. See *supra* notes 201–206 and accompanying text.

219. See *supra* note 205.

220. Afforestation may appear in conservation easement agreements as a necessary step to protect and restore trees. See, e.g., John J. Delaney, Stanley D. Abrams, Frank Schnidman, Patricia E. Salkin & Julie A. Tappendorf, *Handling the Land Use Case: Land Use Law, Practice & Forms* app. G3 (3d ed. 2023) (providing a model for a conservation easement that includes afforestation). But this is distinct from donating an entire plot of unforested land for the *sole purpose* of afforestation. It is the difference between a means to an end and an end in itself. Indeed, the model conservation easement agreement mentioned *supra* seems to use afforestation in a way more similar to what this Note would label reforestation. See *supra* section I.C.3.

come with the risk of IRS action.²²¹ But some courts have taken more expansive views of qualifying donations than seem implied by the plain language of the regulations,²²² and in the absence of congressional or agency action, the courts might be a legitimate avenue through which to create the federal afforestation easement.

The afforestation easement could arguably be found in the Treasury Regulation guidance on legitimate conservation purposes.²²³ The first place to look would be the subsection on protecting an environmental system.²²⁴ Although this subsection speaks in terms of “protection”²²⁵—negative, rather than affirmative, language—it does countenance that a human-made natural structure could be worthy of conservation if that structure served certain wildlife purposes.²²⁶ Theoretically, then, a human-made forest on private property could qualify so long as it met the requirements. But this is an incomplete solution because the plain language of this subsection makes clear that the natural structure must already exist before it can be conserved.²²⁷ This subsection is therefore most useful for its statement that “[t]he fact that the habitat or environment has been altered to some extent by human activity will not result in a deduction being denied.”²²⁸ It does not, by itself, create the afforestation easement.

A similar argument can be made for the guidance on preservation of open space.²²⁹ This is the subsection of the Treasury Regulations that explicitly deals with forest.²³⁰ Again, this section uses the static, negative language of preservation rather than acknowledging affirmative planting as a legitimate purpose.²³¹ It speaks of three qualifying open space actions:

221. There does not appear to be any evidence that a taxpayer has attempted to donate land for the purposes of creating any kind of new natural structure on that land, as this Note suggests. Indeed, this approach would seem to violate the working theory of conservation easements, which is that they are *negative* easements that rarely, if ever, contain affirmative duties toward the land. See Owley & Takacs, *supra* note 178, at 82–83.

222. See McLaughlin, *Valuation*, *supra* note 161, at 274–80 (discussing controversial donations of golf courses as conservation easements).

223. Treas. Reg. § 1.170A-14(d) (2023). Because the Treasury Regulations expand upon the I.R.C., this section focuses exclusively on the language contained in the Treasury Regulations.

224. *Id.* § 1.170A-14(d)(3)(i).

225. *Id.*

226. *Id.* (“For example, the preservation of a lake formed by a man-made dam or a salt pond formed by a man-made dike would meet the conservation purposes test if the lake or pond were a nature feeding area for a wildlife community that included rare, endangered, or threatened native species.”).

227. *Id.* (“The donation of a qualified real property interest to protect a significant relatively natural habitat in which a fish, wildlife, or plant community . . . normally lives will meet the conservation purposes test of this section.”).

228. *Id.*

229. *Id.* § 1.170A-14(d)(4).

230. *Id.* § 1.170A-14(d)(4)(i).

231. *Id.*

scenic enjoyment, government policy, and significant public benefit.²³² Because of the emphasis on “preservation” in the subsection concerning scenic enjoyment, only a weak argument could be made that afforestation would qualify.²³³ The subsection is focused not on new plantings but on maintaining what already exists for its aesthetic value.²³⁴ Perhaps an affirmative argument could be made that the possibility of *future* aesthetic value conforms with the requirements of this subsection, but this argument is somewhat attenuated and would rely on judicial open-mindedness.

Perhaps the best argument that the afforestation easement is implicit in the current Treasury Regulations is that afforestation is a significant public benefit within the meaning of § 1.170A-14(d)(4)(iv).²³⁵ Although this, like the other subsections discussed, speaks in the language of “preservation,”²³⁶ the illustration provided in the subsection seem to countenance the possibility—if not the explicit allowance—of a deduction being granted for the donation of land set to become a more natural environment.²³⁷ Specifically, that subsection states that “[t]he preservation of an ordinary tract of land would not in and of itself yield a significant public benefit, but . . . [f]or example, the preservation of a vacant downtown lot . . . as a public garden would . . . yield a significant public benefit.”²³⁸ While there are counterarguments (e.g., the garden must be “public,” perhaps the garden must already exist in the lot), a public garden in a downtown lot is not so different from a forest in a backyard. Both involve an ordinary piece of land transformed into a spot of natural beauty. And a more afforested America is a public benefit in the broadest sense of that ideal.²³⁹ If the afforestation easement—or any other distributed nature tools—can be found in the current composition of the Treasury Regulations, this is the best place to begin looking.

Below the surface of the regulations are the understandings that man has a place in the creation of nature,²⁴⁰ that habitats and ecosystems are worthy of protection,²⁴¹ and that at least some non-natural spaces may be

232. Id. § 1.170A-14(d)(4)(ii)–(iv).

233. Id. § 1.170A-14(d)(4)(ii)(A).

234. See, e.g., id. § 1.170A-14(d)(4)(ii)(A)(5).

235. Id. § 1.170A-14(d)(4)(iv). This argument would be made stronger if the additions to this subsection suggested by Jessica Jay were adopted. See Jay, *supra* note 173, at 401–03 (suggesting, for example, adding “agricultural and forestry working lands” to the open spaces provision of the Treasury Regulations).

236. Treas. Reg. § 1.170A-14(d)(4)(iv)(A).

237. Id. § 1.170A-14(d)(4)(iv)(B).

238. Id.

239. See *supra* Part I. The USDA, at least, seems to agree. See USDA, FSP Guidelines, *supra* note 127.

240. See Treas. Reg. § 1.170A-14(d)(3)(i); *supra* notes 226–228 and accompanying text.

241. See § 1.170A-14(d)(3); *supra* notes 229–232 and accompanying text.

worthy of preservation for their potential to grow natural systems.²⁴² It would require a creative and tenacious litigator, a willing taxpayer, and a sympathetic judge to etch that understanding into the law of conservation easements. But it is possible.

4. *Rethinking Valuation.* — Along with creating the afforestation easement, some thought should be given to how these donations would be valued. There have already been many criticisms of the valuation methodology used for calculating conservation easement deductions, along with calls for reform.²⁴³ For one thing, the current valuation structure favors those with high incomes.²⁴⁴ For another, it incentivizes considerable dishonesty in appraisals, leading to questionably high deductions.²⁴⁵

Rather than a calculation based on the difference in value between HBU and the value with a conservation easement in place, which would tend to be minimal in the case of afforestation easements made by small landowners like Ann,²⁴⁶ donations made as afforestation easements should be valued based on the value of the conservation itself. This would be difficult to calculate, but it could be done at a per-tree-planted rate²⁴⁷ by tying the value of afforestation projects to the social cost of carbon,²⁴⁸ or by providing a flat, per-acre tax rebate. There are many ways conservation value could be calculated, taking into account geography, ecology, connectivity, and other factors.²⁴⁹ But the important point is that the valuation philosophy must shift value away from valuing only what is lost in development rights to valuing instead what is gained in water quality, habitat establishment, carbon sequestration, and other environmental benefits.

242. See § 1.170A-14(d)(4)(iv)(B); *supra* notes 235–237 and accompanying text.

243. See, e.g., McLaughlin, *Valuation*, *supra* note 161; Wolf, *supra* note 158.

244. See McLaughlin, *Donations*, *supra* note 159, at 99–100.

245. See McLaughlin, *Valuation*, *supra* note 161, at 228.

246. A backyard, or even larger properties, may not worth all that much to begin with, and thus an important financial incentive would be lost in using this valuation method in this context.

247. See Robbins, *supra* note 56, at 93 (suggesting this approach).

248. See Kevin Rennert, Brian C. Prest, William A. Pizer, Richard G. Newell, David Anthoff, Cora Kingdon, Lisa Rennels, Roger Cooke, Adrian E. Raferty, Hana Ševčíková & Frank Errickson, *The Social Cost of Carbon: Advances in Long-Term Probabilistic Projections of Population, GDP, Emissions, and Discount Rates*, *Brookings Papers on Econ. Activity*, Fall 2021, at 223, 224, https://www.brookings.edu/wp-content/uploads/2021/09/15985-BPEA-BPEA-FA21_WEB_Rennert-et-al.pdf [<https://perma.cc/SSM4-JPM8>] (explaining the social cost of carbon).

249. One idea to encourage the establishment of corridors would be to give donors who contribute to larger, connected corridors a higher incentive than those donating only small parcels, for example.

D. *Toward Distributed Nature*

If created, the afforestation easement would be one of many potential legal tools for incentivizing distributed nature and thus go a long way toward bringing private landowners into the fight against climate change and biodiversity loss by cultivating a regenerative ethic between those landowners and their lands.²⁵⁰ By emphasizing the qualities of land acquisition, stewardship, and perpetuity, the afforestation easement would provide the resources necessary to (1) get people to donate their land, (2) pair them with experts to help them grow their forests, and (3) ensure that those forests are protected as they grow. The afforestation easement should not be the only tool in the distributed nature toolbox, but it stands as an example of how current legal structures, with substantive and philosophical tweaks, can be used to incentivize private participation in regenerative conservation, thus adding another mechanism with which to enlist individuals in the collective effort to combat climate change.

E. *Problems and Limitations*

The afforestation easement is a limited tool with its own shortcomings. This section attempts to address some of the objections that might be raised against it.

The first set of objections might come less from the idea of the afforestation easement than from the idea of distributed nature itself. These objections might challenge the notion that such a small natural space can really be said to constitute “nature” at all.²⁵¹ Certainly, these challengers might say, it cannot be argued that a three-acre forest has the same benefits as a “true” forest.²⁵² It is correct that the smaller the forest, the fewer its benefits.²⁵³ But it is unfair to say that small parcels of nature provide *no* benefit. Trees still clean the air and purify the water; they still provide homes for those living things that find them; they still provide shade to humans; they are still extraordinary beings. Even small forests provide more benefits than no forests. And if the proper incentives are adopted and distributed nature catches on, small forests could become larger and larger forests. The afforestation easement is not an end unto

250. Although this Note has used the hypothetical of Ann’s backyard, this instrument could be used for varying kinds of different lands. For example, it has been suggested that it is more efficacious, in the carbon sequestration context, to replace ethanol corn fields with trees. See Eisenson, *supra* note 85. The afforestation easement could be used for that purpose, or for many others as well. The backyard is simply an example.

251. The definition of “nature” has always been contested and politicized. See Jedediah Purdy, *After Nature: A Politics for the Anthropocene* 12 (2015). But even small pockets of natural space can be thriving with life. See generally David George Haskell, *The Forest Unseen: A Year’s Watch in Nature* (2012) (documenting everything that occurs, over a year, in one square meter of forest).

252. See Tallamy, *supra* note 11, at 38–44 (explaining the importance of size and connectivity for the health of creatures living in forests).

253. See *id.*

itself. It is a tool that humanity—at least that portion of humanity residing in the United States—can use to begin to rebuild what it has lost.

Second, can it really be that locking valuable private real estate away in the form of growing forests is worth the federal government's time when there is housing to build, solar to install, and turbines to raise?²⁵⁴ And if forests are to be given precious land in the present, is it really wise to say that future generations cannot use that land for their own purposes? These are valid concerns. But land use always involves certain tradeoffs. Human beings in America have taken a lot of space for themselves at the expense of massive populations of other living beings.²⁵⁵ It is time to start building legal structures that entitle nonhuman living things to their own spaces. And in terms of dead-hand control, it is simply inevitable that the choices made today will impact the future.²⁵⁶ This Note submits that some of those choices should involve safeguarding certain portions of land from the decisions of future generations who will themselves be human and prone to the human tendencies to spread, consume, and destroy.

Finally, some may object that this Note reifies private property and will inevitably lead to windfalls for wealthy landowners. Certainly, there is legitimacy to these concerns. But private property in America is a reality, and one that must be confronted in any conversation about land use, the regeneration of nature, or conservation. And while conservation easements have been abused by wealthy landowners, the afforestation easement—particularly if the valuation method is adjusted in the ways suggested²⁵⁷—would be less favorable to the wealthy. A deduction that is not tied to income level would help to solve the problem of land rich, cash poor folks for whom conservation easements have proven ineffectual.²⁵⁸ If valuation is calculated based on conservation value, it will provide cash to those Americans who may have land but still lack financial stability. Further, the afforestation easement represents a means by which to separate private landowners from their perpetual land rights and transfer

254. See Gerrard, *Time for Triage*, *supra* note 39, at 41 (arguing that renewables buildout should be prioritized above other land uses); Annie Lowrey, *The U.S. Needs More Housing Than Almost Anyone Can Imagine*, *The Atlantic* (Nov. 21, 2022), <https://www.theatlantic.com/ideas/archive/2022/11/us-housing-gap-cost-affordability-big-cities/672184/> (on file with the *Columbia Law Review*) (arguing the need for more housing, but also noting that most of this need is in a few large cities).

255. See *supra* Part I.

256. The very nature of man-made climate change demonstrates that current and past generations impact future generations: Carbon dioxide and other greenhouse gasses emitted today directly impact the living conditions of people in the future. But for a more comprehensive philosophical argument that the decisions made today impact countless theoretical future people, see Will MacAskill, *What We Owe the Future* 19 (2022) (“[I]f we truly care about the interests of future generations—if we recognize that they are real people, capable of happiness and suffering just like us—then we have a duty to consider how we might impact the world they inhabit.”).

257. See *supra* section III.C.4.

258. See McLaughlin, *Donations*, *supra* note 159, at 99–100.

those rights to a public good. While private landowners may be the immediate beneficiaries of the financial incentives involved, the public—as well as countless nonhuman living beings—are the ultimate winners.

CONCLUSION

In the face of global climate change, humanity needs new ways of living with the natural world that are fundamentally regenerative, and new legal tools for doing so. One of those new ways of living could be distributed nature, an individual recognition of the responsibility to begin rebuilding the natural world on one's own private property. One way to achieve distributed nature is to encourage the planting and growth of new forests on private lands. And one tool to achieve that afforestation ideal is the afforestation easement. With the afforestation easement, Ann could receive a financial incentive to give her land over to a new forest. She could get help creating that forest. And she could be assured that the forest will still be around when her grandchildren and their children's children grow up—hopefully on a planet bursting with renewed life.

