

# THE FUTURE OF PROPERTY

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*Property law focuses predominantly on spatial conflicts of interest between neighbors but neglects temporal conflicts between generations. This lack of attention to the temporal dimension leads to a troubling mismatch in property law: while property rights last forever, the corresponding duties that require property holders to respect the interests of others are remarkably short lived. The result is that property law currently does not adequately protect the rights of future generations. In this Article, we offer a blueprint for correcting this anomaly. We advocate a change in the current conception of property and propose that property law focus more on intertemporal conflicts of interest. This new conceptualization provides greater consideration to intertemporal externalities and the problems of overconsumption and overuse by current property holders, so that property law can better protect the rights of future generations. This type of protection is needed now more than ever, with the growing recognition that the climate crisis represents a catastrophic failure on our part to respect the interests of those who will come after us. We discuss the implementation of our proposal, demonstrate its benefits, and explain its origins within the existing structure of property law.*

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The second and third authors are grateful for the financial support of the German-Israeli Foundation for Scientific Research and Development under grant number 1529. For helpful comments, the authors are all grateful to Vanessa Casado Perez, Hanoch Dagan, Douglas Harris, Bruce Huber, Shelly Kreiczler-Levy, Mark Lunney, Colm McGrath, Massimo Renzo, JB Ruhl, Elsabe Van der Sijde, Rachel Walsh, Katy Wells, and Katrina Wyman, as well as participants in the 2022 Modern Studies in Property Law Conference at Oxford University; the 2022 Society for Environmental Law and Economics Conference at NYU; the 2022 annual meeting of the Association for Law, Property, and Society; the 2022 YLT Workshop at King's College London; the Cambridge Centre for Environment, Energy and Natural Resources workshop series 2023; and the Cambridge Private Law workshop 2023. Chloe Gershon, Heather Gowman, Iftekhar Hussain, Maor Levi, Annabelle Oomens, and David Yaacobi provided excellent research assistance.

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## INTRODUCTION

Property scholarship and theory focus overwhelmingly on the spatial aspect of property.<sup>1</sup> Property law delineates physical boundaries between assets,<sup>2</sup> divides resources into areas of control and ownership,<sup>3</sup> regulates spillovers from one place to another, and sanctions unauthorized crossings of boundaries. Household concepts such as

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<sup>1</sup> On the spatial dimension in property law, see generally Yael R. Lifshitz, *The Geometry of Property*, 71 U. TORONTO L.J. 480 (2021).

<sup>2</sup> *Id.* at 480–82.

<sup>3</sup> *Id.*

trespass,<sup>4</sup> easement,<sup>5</sup> and nuisance<sup>6</sup> primarily regulate spatial conflicts of interest. Trespass occurs when an owner's boundary is breached by another;<sup>7</sup> easements describe situations when an owner's boundary may be crossed;<sup>8</sup> and nuisance concerns instances in which noise, odors, and other harmful effects cross over from one place to another.<sup>9</sup> Such doctrines typically balance the rights and duties of contemporary neighbors across spatial boundaries.

This Article explores another dimension of property law: its largely neglected temporal aspect. The temporal dimension of property illuminates spillovers across time, rather than across spatial boundaries, and conflicts between generations of right holders, rather than between contemporary neighbors. This conceptual shift raises an urgent question: whether, and to what extent, current property holders have obligations toward future generations—i.e., others who are not yet here and will come into play in the (distant) future. Our goal is to consider the need to expand and develop the obligations of property holders to such future owners and third parties. This inquiry is particularly pressing. As evidence of impending environmental catastrophes continues to accumulate,<sup>10</sup> it is becoming clear that existing legal institutions are failing future generations. At a time when policymakers are being called

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<sup>4</sup> See RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL AND EMOTIONAL HARM § 50 (AM. L. INST. 2012) (“A trespasser is a person who enters or remains on land in the possession of another without the possessor’s consent or other legal privilege.”); W. PAGE KEETON, DAN B. DOBBS, ROBERT E. KEETON & DAVID G. OWEN, PROSSER AND KEETON ON THE LAW OF TORTS § 87, at 622 (W. Page Keeton ed., 5th ed. 1984) (explaining that the law of trespass applies to gross physical invasions by visible objects and operates under a strict liability regime); Thomas W. Merrill, *Trespass, Nuisance, and the Costs of Determining Property Rights*, 14 J. LEGAL STUD. 13, 16 (1985).

<sup>5</sup> See A. JAMES CASNER, W. BARTON LEACH, SUSAN FLETCHER FRENCH, GERALD KORNGOLD & LEA VANDERVELDE, CASES AND TEXT ON PROPERTY 890 (5th ed. 2004) (“An easement creates a right to enter and use land belonging to another and obligates the landowner to refrain from interfering with the authorized use.”).

<sup>6</sup> See Henry E. Smith, *Exclusion and Property Rules in the Law of Nuisance*, 90 VA. L. REV. 965, 992 (2004) (explaining that nuisance protects landowners’ interests in the use of their land from “indirect intrusions such as noise, odor, and occasionally aesthetic blight, that interfere with an owner’s use and enjoyment of her land”); RESTATEMENT (SECOND) OF TORTS § 821D (AM. L. INST. 1979) (defining “private nuisance” as “a nontrespassory invasion of another’s interest in the private use and enjoyment of land”).

<sup>7</sup> See sources cited *supra* note 4.

<sup>8</sup> See CASNER, LEACH, FRENCH, KORNGOLD & VANDERVELDE, *supra* note 5.

<sup>9</sup> See sources cited *supra* note 6.

<sup>10</sup> See Steven C. Sherwood & Matthew Huber, *An Adaptability Limit to Climate Change Due to Heat Stress*, 107 PROC. NAT’L ACAD. SCIENCES 9552, 9552 (2010); INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2022: IMPACTS, ADAPTATION AND VULNERABILITY (Hans-Otto Pörtner et al. eds., 2022).

upon to respond to the climate crisis, we offer a new way to address this challenge.<sup>11</sup>

We begin our analysis by showing that existing property law doctrine fails to adequately address the interests of future generations.<sup>12</sup> The traditional view of property, shared by property theorists and policymakers, is that property rights induce current right holders to look far into the future and consider the interests of future stakeholders because property rights continue indefinitely.<sup>13</sup> Since the right of current owners lasts forever, they should want to maximize the value of their assets and resources for all eternity and avoid overconsumption and overuse.<sup>14</sup> Property theorists regard this claim as one of the fundamental justifications for the existence of property rights.<sup>15</sup>

We show that this classic argument is unconvincing. The value of their assets hundreds or thousands of years in the future is of little concern to rational, present-day property holders, and the fact that one theoretically owns Greenacre indefinitely provides no true incentive to

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<sup>11</sup> Scholarship is increasingly acknowledging the need to adjust property law to aspects related to climate change. See, e.g., Alexandra B. Klass, *Property Rights on the New Frontier: Climate Change, Natural Resource Development, and Renewable Energy*, 38 *ECOLOGY L.Q.* 63, 63 (2011) (exploring “the history of natural resources law and pollution control law to provide insights into current efforts by states to create solar easements, wind easements and other property rights in renewable resources to help achieve climate change and energy independence goals”); Holly Doremus, *Climate Change and the Evolution of Property Rights*, 1 *U.C. IRVINE L. REV.* 1091, 1092 (2011) (“Assuming that humanity and its institutions survive, however, property is one of several areas where the law will need to adapt to new circumstances. . . . [P]roperty rules are likely to have especially significant consequences for the ability of human societies to respond to some of the effects of climate change, such as altered precipitation patterns and rising sea levels.”); A. Dan Tarlock, *Global Climate Change and the Stability of Property Rights*, in *PLANNING BY LAW AND PROPERTY RIGHTS RECONSIDERED* 135 (Thomas Hartmann & Barrie Needham eds., 2012) (describing how the institutional system of property rights exhausts resilience in the Global North); Daniel Cordalis & Dean B. Suagee, *The Effects of Climate Change on American Indian and Alaska Native Tribes*, 22 *NAT. RES. & ENV'T* 45, 45 (2008) (reviewing calls to protect the environment for the American and Alaskan Native tribes as a matter of “collective human responsibility”).

<sup>12</sup> We develop this argument in Part II.

<sup>13</sup> See JESSE DUKEMINIER, JAMES E. KRIER, GREGORY S. ALEXANDER, MICHAEL H. SCHILL & LIOR JACOB STRAHILEVITZ, *PROPERTY* 215 (8th ed. 2014) (highlighting the everlasting nature of fee simple property rights); Lee Anne Fennell, *Fee Simple Obsolete*, 91 *N.Y.U. L. REV.* 1457, 1468 (2016) (“[A]n owner can undertake projects of any length she chooses and wait indefinitely for her investments and gambles on the land to pay off.”).

<sup>14</sup> See Richard A. Epstein, *Property Rights, State of Nature Theory, and Environmental Protection*, 4 *N.Y.U. J.L. & LIBERTY* 1, 10 (2009) (“The expanded definition of possession, which makes permanent ownership possible, also has powerful positive implications for environmental protection. . . . A farmer who would sow seed could now harvest the crops. As owner of both crops and the land, he fully internalized any decision to compromise the value of the land to increase crop yield.”).

<sup>15</sup> Robert C. Ellickson, *Property in Land*, 102 *YALE L.J.* 1315, 1369 (1993) (“The fee simple in land cleverly harnesses human selfishness to the cause of altruism toward the unborn, a group not noted for its political clout or bargaining power.”).

avoid overconsumption. Market forces may induce owners to preserve the value of their assets decades into the future, but not centuries. Moreover, cognitive biases that cause owners to focus on the present make it even harder for them to consider the value of their assets far into the future.

We also show that doctrinal limitations on the power of property holders or their duties toward others fail to adequately protect the interests of future generations. This is because these doctrinal elements focus predominantly on spatial, rather than temporal, conflicts of interest. Indeed, property law doctrine is designed to compel right holders to respect the interests of their current neighbors but does not limit their power in ways that are required to protect the interests of future generations. The doctrine of nuisance, for example, places some limit on the power of property owners and forces them to use their property in a way that does not harm the owners of adjacent properties.<sup>16</sup> Nuisance, however, does not require an owner to act in a way that respects the interests of future right holders.<sup>17</sup> Zoning and planning law, which could take the interests of future generations into account, also largely fails to do so. Based on empirical research we conducted into zoning laws of several municipalities in the United States, we show that the law focuses primarily on the here and now, and does little to protect the interests of future generations.<sup>18</sup> This general phenomenon leads to a temporal mismatch in property law: while property rights are granted forever, the corresponding duties that are supposed to require property holders to respect the interests of others are largely limited to the present or near future.

Based on this analysis, this Article proposes reforms designed to enable property law to better serve the interests of future generations.<sup>19</sup> We propose to do this by addressing the temporal mismatch described above. We propose that existing doctrines that impose duties on property right holders vis-à-vis their current neighbors be stretched over time so that they provide similar protections to future stakeholders. A key example is the doctrine of waste,<sup>20</sup> a longstanding and now rarely used

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<sup>16</sup> See RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 63 (9th ed. 2014) (explaining that instead of absolute rights, nuisance presents a balancing approach through applying the standard of reasonableness, which “involves comparing the cost to the polluter of abating the pollution with the lower of the cost to the victim of either tolerating the pollution or eliminating it himself”).

<sup>17</sup> See, e.g., Epstein, *supra* note 14, at 12, 15–16.

<sup>18</sup> See *infra* Section III.B.

<sup>19</sup> We discuss our proposed reforms in Part IV.

<sup>20</sup> The doctrine of waste originated in feudal England and later made its way across the Atlantic and into U.S. law. The primary goal of the doctrine was to mediate conflicts between right holders who had a legal interest in the same asset at different times. The common example of such a split

element of property law<sup>21</sup> that prohibits property holders from using their assets in ways that leave nothing for the next holder (under certain conditions).<sup>22</sup> We propose to expand this doctrine so that it protects not only the holders immediately succeeding the current one, but also those far into the future. These new and innovative solutions are based, among others, on classic property law, theory, and doctrine. We suggest that the solutions needed to bring property law into the future include looking into its origins to revive and revitalize its past.

We detail the procedural and institutional aspects of our proposal and explain why the rights of future generations should be protected within the framework of property law, not only by centralized regulation. As a decentralized system that vests decision-making power in individuals, property law has significant informational advantages that complement the knowledge of central regulators. We suggest that it would be unwise to renounce property law as a means for asserting the rights of future generations, and advocate for allowing present-day claimants to represent such interests in court.

In developing these arguments, this Article makes three novel and timely contributions. The first is conceptual, shifting the focus of property law from spatial to temporal conflicts of interest. This is a key conceptual step because it offers a new perspective on the goals and potential benefits of property law. The second contribution is analytical, exposing structural flaws in the existing framework of property law and debunking the core arguments used by property theorists to justify the existing structure of this area of law. The third contribution is normative, with immediate policy implications: this Article proposes important reforms to improve our ability to contend with the consequences of decisions that affect the future. Policymakers are already being called upon to address the climate crisis, one of the greatest challenges of our time. Recently, the U.S. Senate passed what may be the largest spending

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over time is between a holder of a fee simple and a holder of a lease or a life estate. See Bruce R. Huber, *Temporal Spillovers*, in ENVIRONMENTAL LAW AND ECONOMICS 43, 45–46 (Klaus Mathis & Bruce R. Huber eds., 2017). For a discussion on the current and historical scope of the doctrine of waste, see DUKEMINIER, KRIER, ALEXANDER, SCHILL & STRAHILEVITZ, *supra* note 13, at 239, 241–42.

<sup>21</sup> See *infra* Section IV.A.1.

<sup>22</sup> See, e.g., John A. Lovett, *Doctrines of Waste in a Landscape of Waste*, 72 MO. L. REV. 1209, 1211 (2007) (noting the prominent use of waste, pertaining to “dispute[s] between a present estate holder and future interest holder, with the former seeking to maximize short term economic value and impose externalities on the latter either by depleting resources like timber or neglecting to make necessary repairs”).

package on climate in American history.<sup>23</sup> The ramifications of climate change are likely to be felt by everyone on Earth,<sup>24</sup> but most acutely by those with fewer resources.<sup>25</sup> Reforms that improve our ability to cope with urgent climate concerns should be considered as part of the necessary future of property law.

This Article proceeds as follows: Part I describes the concept of intertemporal conflicts of interest and explains the problem of overuse and overconsumption by current property holders. It then reviews the scholarly consensus on the ability of property law to solve these problems. Because property rights last forever, scholars assume that property holders seek to optimize the value of their assets for all eternity. Part II challenges this scholarly consensus on two grounds. First, the value of assets in the far future, hundreds of years from now, has no real bearing on the current values of assets. Therefore, rational welfare-maximizing right holders will not consider such future values in their decisions and will tend to overconsume. Second, cognitive biases will cause right holders to focus more on the present and prevent them from properly assessing long-term interests.<sup>26</sup> Part III discusses doctrinal elements that limit the power of property holders, showing that they require right holders to respect primarily the interests of their current neighbors, and neglect to give voice to the interests of future generations. It highlights the temporal mismatch we find in property doctrine: whereas property rights last forever, property duties, the doctrines that are supposed to make property holders consider the interests of others, are time limited.

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<sup>23</sup> Tony Romm, *Senate Approves Inflation Reduction Act, Clinching Long-Delayed Health and Climate Bill*, WASH. POST (Aug. 7, 2022, 5:16 PM), <https://www.washingtonpost.com/us-policy/2022/08/07/senate-inflation-reduction-act-climate> (last visited Feb. 10, 2023) (“[T]he Inflation Reduction Act of 2022 . . . would authorize the biggest burst of spending in U.S. history to tackle global warming . . .”); James Dinneen, *What Does the Inflation Reduction Act Mean for US Carbon Emissions?*, NEWSIDENTIST (Aug. 8, 2022), <https://www.newscientist.com/article/2332499-what-does-the-inflation-reduction-act-mean-for-us-carbon-emissions> [https://perma.cc/SW5E-GMUM] (relaying that the Inflation Reduction Act includes “the largest climate spending package in US history”); *Joe Biden’s Signature Legislation Passes the Senate, at Last*, ECONOMIST (Aug. 9, 2022), <https://www.economist.com/united-states/2022/08/09/joe-bidens-signature-legislation-passes-the-senate-at-last> (last visited Feb. 10, 2023) (discussing the Inflation Reduction Act); Andrew Ross Sorkin et al., *Doing the Math on the Inflation Reduction Act*, N.Y. TIMES (Aug. 4, 2022), <https://www.nytimes.com/2022/08/02/business/dealbook/inflation-reduction-act-analysis.html> (last visited Feb. 10, 2023).

<sup>24</sup> See generally INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 10 (detailing and analyzing the effects of climate change).

<sup>25</sup> For a recent and insightful analysis on how the energy transition can both impact and empower people of color and indigent people, see SHALANDA H. BAKER, *REVOLUTIONARY POWER: AN ACTIVIST’S GUIDE TO THE ENERGY TRANSITION* 30 (2021).

<sup>26</sup> See *infra* Section II.B for a discussion of the effect of the present-day cognitive bias that hinders people’s ability to identify with their future selves, and even more so with future third parties.

Based on this analysis, we explain our proposed reforms to property law in Part IV. We propose to fix the temporal mismatch that currently exists in property law doctrine by extending property holders' duties into the future. This will create a more balanced property law, where both the property right and the associated duties exist over similar time periods. In this Part, we also discuss the implementation of the proposed reforms and show the normative justifications for them. A brief conclusion follows.

## I. THE TEMPORAL TRAGEDY AND ITS SUPPOSED SOLUTION

In this Part, we explain the problem of overuse by current owners under the title of the temporal tragedy of the commons. Next, we describe the supposed solution to this problem offered by property law theorists: the forevership or the everlasting property right.<sup>27</sup>

### A. *The Temporal Tragedy of the Commons*

In their broadest sense, externalities are the effects of one actor on the wellbeing of another;<sup>28</sup> negative externalities are those that are inherently detrimental.<sup>29</sup> The concept of negative externalities is central to legal thinking. Legal scholars have long seen the prevalence of negative externalities as a primary justification for legal action.<sup>30</sup> Thus, if one's

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<sup>27</sup> See *infra* notes 73–76 and accompanying text.

<sup>28</sup> See, e.g., STEVEN SHAVELL, FOUNDATIONS OF ECONOMIC ANALYSIS OF LAW 77 (2004) (defining an externality as the effect of the action of one party on the wellbeing of another). Legal scholarship is mainly focused on negative externalities, but some discussion of positive externalities also exists in the literature. For the argument that positive externalities should also be internalized by their producer, see Israel Gilead & Michael D. Green, *Positive Externalities and the Economics of Proximate Cause*, 74 WASH. & LEE L. REV. 1517, 1535–38 (2017) (“[W]here *D*'s conduct generates not only expected *harms*, but also expected *benefits*, the benefits that are externalized by *D* should also be internalized to her.”), and Robert Cooter & Ariel Porat, *Torts and Restitution: Legal Divergence and Economic Convergence*, 92 S. CAL. L. REV. 897 (2019) (arguing that just as injurers in tort law internalize their wrongful harms through damages, benefactors should internalize the benefits they confer on others through the law of restitution). For a critique of how the literature uses the idea of positive externalities to explain the law of restitution, see Maytal Gilboa & Yotam Kaplan, *The Other Hand Formula*, 26 LEWIS & CLARK L. REV. 883 (2022).

<sup>29</sup> ROBERT D. COOTER & ARIEL PORAT, GETTING INCENTIVES RIGHT: IMPROVING TORTS, CONTRACTS, AND RESTITUTION 208–09 (2014).

<sup>30</sup> See, e.g., JULES L. COLEMAN, RISKS AND WRONGS 240–43 (1992) (suggesting a noneconomic justification for encouraging individuals to internalize externalities under a view that perceives individuals who are not compelled to internalize externalities as if “they are permitted to treat those individuals who are the victims of their conduct as means to their own ends, and not as ends in themselves”).



activities prove harmful to others, legal intervention may be necessary to internalize the negative externalities,<sup>31</sup> to create incentives for actors to avoid harming others,<sup>32</sup> or to induce the use of precautionary measures.<sup>33</sup>

Negative externalities are usually discussed and explained with reference to space and location. Consider the paradigmatic examples of externalities discussed in the literature: straying cattle,<sup>34</sup> factories polluting nearby waters,<sup>35</sup> or train sparks flying into nearby fields.<sup>36</sup> These are all examples of spatial negative externalities, where activities in one location detrimentally affect neighboring locations, usually by crossing a spatial boundary.

By comparison, scholarly discussion of temporal externalities is sparse. Temporal externalities are, in fact, ubiquitous: people's activities can adversely affect their neighbors not only across spatial boundaries but also across time spans.<sup>37</sup> To illustrate, suppose you own a patch of woodland and face the choice of cutting down the trees, leaving them as they are, or choosing something in between. Whichever you choose, your decision will affect future interest holders. If you decide to cut down all

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<sup>31</sup> Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 348 (1967) (“A primary function of property rights is that of guiding incentives to achieve a greater internalization of externalities.”); Omer Y. Pelled, *The Proportional Internalization Principle in Private Law*, 11 J. LEGAL ANALYSIS 160, 160–61 (2019) (highlighting the function of private law rules in making actors internalize the benefits and costs of their actions); Matthew Castelli, *Fracking and the Rural Poor: Negative Externalities, Failing Remedies, and Federal Legislation*, 3 IND. J.L. & SOC. EQUAL. 281, 301–02 (2015) (suggesting that burden-shifting rules can help internalize an actor's negative externalities by creating the presumption that the actor is responsible for the harm that was caused by their actions); Giuseppe Dari-Mattiacci, *Negative Liability*, 38 J. LEGAL STUD. 21, 27 (2009) (suggesting that restitution for wrongs or encroachment provides an incentive to internalize negative externalities).

<sup>32</sup> GUIDO CALABRESI, *THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS* 26–27, 68–69 (1970) (explaining that the main “function of accident law is to reduce the sum of the costs of accidents and the costs of avoiding [them],” and that the primary means of achieving this is to reduce the number and severity of accidents, which is accomplished by forbidding potentially harmful acts or by making them less attractive to the injurer); Kenneth S. Abraham, *Strict Liability in Negligence*, 61 DEPAUL L. REV. 271, 278–80 (2012) (suggesting that a strict liability rule can incentivize injurers to reduce their harmful activities, as compared with a negligence rule, which allows injurers to engage in harmful activities as long as they act with reasonable care).

<sup>33</sup> See, e.g., Steven Shavell, *Liability for Harm Versus Regulation of Safety*, 13 J. LEGAL STUD. 357, 365–66 (1984) (explaining that controlling risk “should involve the joint use of liability and regulation,” as the use of both induces the use of appropriate precautionary measures).

<sup>34</sup> R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 2–6 (1960) (discussing the example of straying cattle as paradigmatic of a negative externality).

<sup>35</sup> *Id.* at 1; Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089, 1123–24 (1972).

<sup>36</sup> Richard A. Posner, *A Theory of Negligence*, 1 J. LEGAL STUD. 29, 60 (1972) (illustrating the question of liability in negligence for the damage created by sparks emitted from locomotive engines to a farmer's property near the railroad).

<sup>37</sup> Huber, *supra* note 20, at 43.

the trees, the lack of trees could impact the view for decades. Removing the trees could have implications for how the soil holds in a century, the amount of greenhouse gases that will be in the atmosphere, and so on. If you decide to invest in cultivation or refrain from removing the trees, your decision will also have consequences for the future.<sup>38</sup> As another example, suppose you have decided to bury chemicals in the ground for storage. Even if these chemicals are not harmful today, they may leak in a few decades or centuries and contaminate the soil and groundwater.<sup>39</sup> Similarly, agricultural chemicals used on crops in the present can have latent health effects. In all these examples, actions taken by individuals today have consequences beyond the present, across time and temporal boundaries.

Temporal spillover effects can manifest over a short period of time, such as when a current polluting landowner becomes insolvent and leaves the site's cleanup to immediate successors.<sup>40</sup> Temporal spillover effects can also manifest over longer periods of time, as in the examples of soil

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<sup>38</sup> See, e.g., Michael Pappas, *Anti-Waste*, 56 ARIZ. L. REV. 741, 763 (2014) ("Those alive today may not only discount future uses to present value, but they might also 'care very little about the well-being of individuals ten generations in the future.'" (quoting SHAVELL, *supra* note 28, at 71 n.74)); *id.* (citing POSNER, *supra* note 16, at 73–74) (discussing Posner's example of economic incentives regarding the cutting of trees).

<sup>39</sup> For a summary of the prospective influence of such present activities over future generations, see Lisa Heinzerling, *The Temporal Dimension in Environmental Law*, 31 ENV'T L. REP. 11055, 11067–68 (2001) ("[I]n planning for the disposal of the most radioactive of our radioactive wastes, EPA has dictated that the disposal site must be one that will remain undisturbed for at least 10,000 years. Other persistent contaminants include . . . polychlorinated biphenyls (PCBs), dichlorodiphenyltrichloroethane (DDT), chlordane, dieldrin, and dioxin. These can persist in the environment, and in human tissue, for many years. . . . [T]oday's use and disposal of radioactive substances, chlorinated organic compounds, and heavy metals will continue to pose threats to human health for many decades, in some cases centuries, to come." (footnotes omitted)).

<sup>40</sup> This example is discussed in Huber, *supra* note 20, at 44.

stability,<sup>41</sup> species population health,<sup>42</sup> and climatic changes.<sup>43</sup> Longer-term spillover effects may be due to latent harm (e.g., chemical storage) or cumulative harms that accumulate slowly over time (e.g., species decline or habitat loss). Certain activities can have both spatial and temporal spillover effects. Consider, for example, the case of buried tanks used for chemical waste storage. The chemicals could leak into the neighboring properties, creating a spatial spillover effect. In addition, the storage tanks could slowly erode over time, eventually contaminating the plot in which they are buried, creating a temporal spillover effect.<sup>44</sup>

Some temporal impacts may be internalized by the current owner or a potential buyer in the near future. If the harm is evident at the time buyers seek to purchase the asset, they can take the harm into consideration and factor it into the price they are willing to pay for the asset. Returning to the examples above, if buyers know that the current owner has spilled dangerous chemicals or has eroded the soil by uprooting trees, they will be willing to pay less for the parcel (as compared

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<sup>41</sup> See MOHAMMAD JAFARI, ALI TAVILI, FATEMEH PANAHI, EHSAN ZANDI ESFAHAN & MAJID GHORBANI, RECLAMATION OF ARID LANDS 112 (2018) (explaining how prolonged use of low-quality saline water can cause “irreversible damage to the soil, plants and the environment . . . due to the accumulation of soluble salts or the incidence of the sodic status in the root medium of crops”); JOHN D. MULLEN, AN ECONOMIC PERSPECTIVE ON LAND DEGRADATION ISSUES: ECONOMIC RESEARCH REPORT NO. 9, at 45–46 (2001), [https://www.dpi.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0018/146403/err-09-An-Economic-Perspective-on-Land-Degradation-Issues.pdf](https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0018/146403/err-09-An-Economic-Perspective-on-Land-Degradation-Issues.pdf) [<https://perma.cc/T5K7-NCVG>] (“[C]rop rotations based on conventional tillage and nitrogenous fertilisers yield high levels of plant and animal production in the short term but through declines in soil structure and pH, yields may decline and the range of species that can be grown may narrow. The less vigorous plant cover may then be associated with soil erosion, invasion by weeds and dryland salinity. This process may take thirty years to become apparent in yield losses and reduced cropping options.”).

<sup>42</sup> See R.C. Andrew Thompson, *Parasite Zoonoses and Wildlife: One Health, Spillover and Human Activity*, 43 INT’L J. PARASITOLOGY 1079, 1082 (2013) (reviewing negative effects on wildlife due to environmental contamination caused by human activities). For an illustration of the unpredictable outcomes of human intervention on species’ population, see RICHARD J. LAZARUS, THE MAKING OF ENVIRONMENTAL LAW 11 (2004) (“[P]ublic health workers sought to control mosquito-borne malaria by spraying village huts with the insecticide DDT. The resulting chain of events unwittingly caused even worse consequences for all. The local lizard population was decimated after eating DDT-contaminated food, leading to decreases in the local cat population that was dependent on lizards as a dietary mainstay. The scarcity of cats led to a population explosion of caterpillars and rats that the cats had previously kept in check, with the caterpillars destroying the thatched roofs and the rats causing increases in disease within the village.”).

<sup>43</sup> See Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1162 (2009) (noting that while historically volcanic activity was the largest source of CO<sub>2</sub> emissions, today fossil fuel burning causes CO<sub>2</sub> emissions at levels about fifteen times higher than volcanic activity); LAZARUS, *supra* note 42, at 8 (explaining different human influences on climatic change, such as industrial emissions of CO<sub>2</sub> that promote atmospheric warming, deforestations that reduce CO<sub>2</sub> consumption, and the “use of aerosols that may affect the balance of solar radiation in the atmosphere”).

<sup>44</sup> This example is discussed in Huber, *supra* note 20, at 48.

to the price they would otherwise be willing to pay absent the long-term impacts). In such a case, indeed, the temporal spillover has been internalized. But, importantly, that is often not the case. Rather, this kind of purchasers' dynamic will neither address the harm, nor provide enough of a reason to do so. The detailed reasons as to why this type of solution often fails to fully account for intertemporal harms is discussed in Part III.

The problem of externalities is closely related to overuse, as illustrated in Garrett Hardin's *The Tragedy of the Commons*.<sup>45</sup> If goods, chattels, or land are held in common, there is an incentive for each holder to increase their consumption without regard to the efficient use of the resource as a whole.<sup>46</sup> Thus, if a common pasture is used simultaneously by multiple herdsmen, they will each seek to increase the size of their herd to extract as much value as possible from the common resource.<sup>47</sup> Eventually, this dynamic will lead to the depletion of the resource.<sup>48</sup> Another example of tragic overuse is that of marine debris and plastic pollution. The ocean, a shared resource, is systematically overused by individual stakeholders.<sup>49</sup> These examples illustrate a general problem of divergence between private incentives and public interest: each actor competes to consume as much as possible of the common resource without considering the overall appropriate use of the resource and the legitimate needs of others.

The tragedy of the commons is typically conceptualized in spatial terms.<sup>50</sup> The common grazing ground and the ocean are shared spaces. The distortion of incentives occurs because different users can all draw value from the same space. This spatial aspect of the tragedy of the commons is usually described as a coordination problem between multiple current users: too many herdsmen use the same grazing ground,

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<sup>45</sup> See generally Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1244 (1968).

<sup>46</sup> See *id.* ("Freedom in a commons brings ruin to all.").

<sup>47</sup> *Id.*

<sup>48</sup> *Id.*

<sup>49</sup> Joanna Vince & Britta D. Hardesty, *Governance Solutions to the Tragedy of the Commons That Marine Plastics Have Become*, FRONTIERS MARINE SCI., June 19, 2018, at 1 ("In our modern 'plastic era' plastic debris in the marine environment has become as much a 'commons' and a 'tragedy' as is the ocean itself."); *Editor's Column: Sea Trash, Dark Pools, and the Tragedy of the Commons*, 125 PMLA 523, 533 (2010) ("We can approach the cyborg ocean and the tragedy of ocean wasting by thinking about the imaginary of corporate profiteering, in which oceans are places for stealing resources, dumping trash, and making money through shipping, oil drilling, and so on.").

<sup>50</sup> See generally Ellickson, *supra* note 15. The classic articulation of the tragedy is one that focuses on (roughly) contemporaneous withdrawals from a single shared resource. We wish to broaden the scope by including withdrawals from (or inputs into) resources over multiple time periods.

and too many polluters dump too much plastic in the ocean.<sup>51</sup> Solutions to the tragedy of the commons are similarly presented in spatial terms. For example, one solution is to divide the common grazing ground into smaller areas, or private plots.<sup>52</sup> Another is to assign the entire space to one owner.<sup>53</sup> In either case, each plot will belong to one user, who will utilize it efficiently and not overuse it.<sup>54</sup>

The tragedy of the commons also has an important temporal dimension related to coordination between users across time periods. Strong temporal implications can be observed in the classic tragedy of the commons scenarios. For example, the fact that too many herdsman currently use the grazing ground could mean that nothing will be left for future generations.<sup>55</sup> But a temporal tragedy of the commons can occur even if there are no multiple current users. Each individual current owner effectively shares the asset with a potentially infinite number of future owners. They share the same resource across time, creating a temporal commons that is prone to overuse because the current user has an incentive to extract as much as possible from it, without regard to the needs of future users and to the appropriate use of the resource as a whole. The temporal tragedy of the commons is more pressing now than ever, with rising concerns about climate change and global warming.<sup>56</sup> The

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<sup>51</sup> Vince & Hardesty, *supra* note 49, at 1. On the harms of marine pollution, see Rakesh Kumar et al., *Impacts of Plastic Pollution on Ecosystem Services, Sustainable Development Goals, and Need to Focus on Circular Economy and Policy Interventions*, SUSTAINABILITY, Sept. 6, 2021, at 1 (“Plastic waste exposed to the environment creates problems and is of significant concern for all life forms. Plastic production and accumulation in the natural environment are occurring at an unprecedented rate due to indiscriminate use, inadequate recycling, and deposits in landfills.”); Brittany Ederer & Robert D. Sluka, *Plastics in the Food Chain*, 72 PERSPS. ON SCI. & CHRISTIAN FAITH 167, 168 (2020) (“The consequences of plastic addiction, especially single-use convenience plastics, reach into and beyond the very systems that permit agriculture: they damage terrestrial, freshwater, and marine ecosystems, destroying soil, water, and air.”).

<sup>52</sup> RANDY T. SIMMONS, FRED L. SMITH, JR. & PAUL GEORGIA, CTR. FOR PRIV. CONSERVATION, *THE TRAGEDY OF THE COMMONS REVISITED: POLITICS VS. PRIVATE PROPERTY* 3 (1996) (suggesting that private property, dividing commons into plots, and enforcing rights through fencing the plots are the most efficient solutions to the tragedy of the commons).

<sup>53</sup> *Id.*

<sup>54</sup> *See id.*

<sup>55</sup> James E. Hansen, NASA Goddard Inst. for Space Stud. & Columbia Univ. Earth Inst., *Is There Still Time to Avoid ‘Dangerous Anthropogenic Interference’ with Global Climate?: A Tribute to Charles David Keeling* 14 (Dec. 6, 2005), [http://www.columbia.edu/~jeh1/2005/Keeling\\_20051206.pdf](http://www.columbia.edu/~jeh1/2005/Keeling_20051206.pdf) [<https://perma.cc/X45E-3VTA>] (“The special interests seek to maintain short-term profits with little regard to either the long-term impact on the planet that will be inherited by our children and grandchildren or the long-term economic well-being of our country.”); *see* Hardin, *supra* note 45, at 1244.

<sup>56</sup> *See* Sherwood & Huber, *supra* note 10, at 9554 (“[A] global-mean warming of roughly 7 °C would create small zones where metabolic heat dissipation would for the first time become impossible, calling into question their suitability for human habitation. A warming of 11–12 °C

climate crisis embodies the broader problem of resource use without regard for the welfare of future stakeholders.

### B. *The Forevership*

Property rights are widely considered a key solution to the tragedy of the commons.<sup>57</sup> Property rights force right holders to internalize costs that they would not otherwise take into account.<sup>58</sup> The existence of property rights also allows owners to enter into agreements that address social costs that would not otherwise be mitigated by the owners themselves.<sup>59</sup> Thus, if the grazing ground is given to a single owner, or it is divided into smaller, private lots,<sup>60</sup> owners will each use their plot efficiently and responsibly, without overconsumption or overuse.<sup>61</sup> Each owner fully bears the cost of any reduction in the usefulness of the land and will therefore utilize it efficiently. The owner will also charge other potential users who wish to enjoy the ground, preventing them from overconsuming. Scholars and policymakers therefore believe that property rights are necessary to avoid the ills of common ownership and the tragic consequences of overconsumption.<sup>62</sup>

Property rights are not only thought to provide a solution to the spatial aspects of resource management, but also to the temporal aspect of the tragedy of the commons because property rights are not limited in time but rather last forever.<sup>63</sup> An everlasting property right is supposed to ensure that assets are not shared across time between multiple users, but that each asset is held by only one owner over different periods of time.

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would expand these zones to encompass most of today's human population."); Robert Engelman, *Beyond Sustainababble*, in STATE OF THE WORLD 2013: IS SUSTAINABILITY STILL POSSIBLE? 3, 5 (Linda Starke ed., 2013) ("We desperately need—and are running out of time—to learn how to shift direction toward safety for ourselves, our descendants, and the other species that are our only known companions in the universe.").

<sup>57</sup> See Hardin, *supra* note 45, at 1245 ("The tragedy of the commons as a food basket is averted by private property, or something formally like it."). We use the term "property" to refer, broadly, to mechanisms and legal institutions that regulate the use of resources. As in previous work, we take the view that "[i]n so far as property is the conceptual category that allows us to divide up the control of resources in our world in a distributed manner, property regimes are the instruments of that category." Lifshitz, *supra* note 1, at 481–82.

<sup>58</sup> See *supra* text accompanying note 54.

<sup>59</sup> See, e.g., GARY D. LIBECAP, CONTRACTING FOR PROPERTY RIGHTS: POLITICAL ECONOMY OF INSTITUTIONS AND DECISIONS (1989).

<sup>60</sup> Henry E. Smith, *Semicommon Property Rights and Scattering in the Open Fields*, 29 J. LEGAL STUD. 131, 132 (2000).

<sup>61</sup> *Id.*

<sup>62</sup> See Hardin, *supra* note 45, at 1244–45; Demsetz, *supra* note 31, at 348–49; SIMMONS, SMITH & GEORGIA, *supra* note 52, at 2–3.

<sup>63</sup> See *infra* text accompanying notes 67–72.

Presumably, this owner has an incentive to consume responsibly to make sure that the asset remains beneficial in the future.<sup>64</sup>

To illustrate this point, consider the hypothetical possibility of temporary, time-limited property rights. If property rights were temporary and expired after, say, one year, the current owners of the grazing ground would know that they can benefit from the resource only here and now. Therefore, they would have an incentive to overconsume and take as much as they can in one year of ownership, leaving nothing for subsequent holders—creating temporal overuse. “Forevership,” the everlasting property right, is intended to prevent this tragedy. Under forevership, current owners no longer share the asset with future owners, rather they are sole owners who know that they can benefit from all future streams of income and will therefore seek to maximize the value of the asset not only in the present but over time as well. They will avoid temporal overuse and premature use because they are the ones who will bear both the costs and benefits of the use patterns in the long term. Once the forevership is introduced, property holders have an incentive to invest, improve, and protect the resources and assets under their control because they expect to reap the benefits of those investments over time.<sup>65</sup> When people feel secure in their time horizons, they are more likely to invest in asset development, maximizing its value both in the present and in the future.<sup>66</sup> Conversely, without the ability to reap long-term gains, there is no rational reason to invest in long-term projects or cultivation.

The fact that everlasting property rights help overcome the temporal aspect of the tragedy of the commons is key to property law theory and is considered one of the fundamental justifications for the existence of property rights. Robert Ellickson provided the classic justification for everlasting property rights. The “infinite time-horizon,” according to Ellickson, is “the economic ideal.”<sup>67</sup> Ellickson stated that the forevership can solve the tragedy of the commons far into the future, maintaining that

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<sup>64</sup> Ellickson, *supra* note 15, at 1368–69.

<sup>65</sup> See, e.g., Carol M. Rose, *The Shadow of the Cathedral*, 106 YALE L.J. 2175, 2187 (1997) (“The usual roles of property rules—defining rights and identifying rights-holders—not only counteract Type I transaction costs in deals, but also encourage individual investment, planning, and effort, because actors have a clearer sense of what they are getting.”); see also Richard A. Epstein, *Past and Future: The Temporal Dimension in the Law of Property*, 64 WASH. U. L.Q. 667, 700–03 (1986) (describing the historic shift of title from possession to grant “to A and his heirs”).

<sup>66</sup> Bruce R. Huber, *Negative-Value Property*, 98 WASH. U. L. REV. 1461, 1468–69 (2021) (“Landowners who feel secure in the permanence of their rights, across sufficient space and time, will be more likely to steward their property carefully for their own benefit, and perhaps even for the benefit of their offspring or successors in interest. This feature of property rights has led many to regard private ownership as a critical component of an environmental protection policy.” (footnote omitted)).

<sup>67</sup> Robert C. Ellickson, *The Costs of Complex Land Titles: Two Examples from China*, 1 BRIGHAM-KANNER PROP. RTS. CONF. J. 281, 293 (2012).

a perpetual estate “is a low-transaction cost device for inducing a mortal landowner to conserve natural resources for future generations.”<sup>68</sup> He further explained that “the key to land conservation is to bestow upon living persons property rights that extend perpetually into the future.”<sup>69</sup> Theoretically, the forevership structure of the fee simple is intended to overcome temporal spillover effects and encourage owners to make the right decisions between harvesting now or later, and investing now, later, or not at all. Richard Epstein explained that permanent ownership is a solution to temporal externalities because it forces owners to “make intelligent choices between investment, consumption, and saving,” and to “fully internalize[] any decision to compromise the value of the land.”<sup>70</sup> Lee Anne Fennell explained that “the unlimited time horizon encourages owners to make the right choices between chopping down trees now or letting them grow into larger trees.”<sup>71</sup> Rational beings are expected to be able to see and consider all the implications of their actions, including far into the future. The standard model predicts that right holders should strive to invest in ways that promote the interests of future generations and avoid overconsumption. According to this standard account, property not only increases the value of assets but also “has powerful positive implications for environmental protection.”<sup>72</sup>

Doctrine follows this fundamental rationale. In the case of property rights in land, the standard form of right is the fee simple absolute (or fee simple, for short).<sup>73</sup> Almost all privately owned land in the United States is held in fee simple absolute,<sup>74</sup> which is not time limited but lasts

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<sup>68</sup> Ellickson, *supra* note 15, at 1368. Demsetz takes a similar view, explaining that “an owner of a private right to use land acts as a broker whose wealth depends on how well he takes into account the competing claims of the present and the future.” Demsetz, *supra* note 31, at 355.

<sup>69</sup> Ellickson, *supra* note 15, at 1369.

<sup>70</sup> Epstein, *supra* note 14, at 10.

<sup>71</sup> Fennell, *supra* note 13, at 1469 (“In other words, the fee simple handily internalizes the sorts of purely temporal spillovers that historically led to dust-ups between life tenants and remaindermen, landlords and tenants.”).

<sup>72</sup> Epstein, *supra* note 14, at 10.

<sup>73</sup> This baseline of the forevership is true at least in Anglo-American or postcolonial legal traditions. Different social and cultural groups around the world have differing views as to their long-term entitlements to assets, some of which are more attuned to giving future generations a voice in present-day right holders’ decisions. See, e.g., Douglas Sanderson (Amo Binashii) & Amitpal C. Singh, *Why Is Aboriginal Title Property if It Looks like Sovereignty?*, 34 CAN. J.L. & JURIS. 417, 423, 442 (2021). As opposed to Anglo-American notions of ownership, “[a]boriginal title holders are burdened with a duty to preserve the land for a community (and its future members).” This is a regulatory obligation “to preserve the future interests of those linked with the land.” *Id.* at 442–43.

<sup>74</sup> Fennell, *supra* note 13, at 1458; JOHN G. SPRANKLING, UNDERSTANDING PROPERTY LAW 109 (3d ed. 2012).



forever.<sup>75</sup> We call this form of property right “forevership” to highlight its perpetual nature. This type of indefinite tenure is limited not by time but “only by the durability of the legal and political structures that support the estate.”<sup>76</sup>

## II. CHALLENGING THE STANDARD JUSTIFICATION

In this Part, we argue that everlasting property rights fail to deliver on their promise. We challenge the standard justification of forevership on two grounds. First, the fundamental economic justification for property rights itself appears to be time limited because rational actors do not sufficiently benefit from the state of events too far into the future. Second, cognitive biases prevent us from truly “seeing” our future selves, let alone future generations and future third parties.

### A. *The Rational Time Horizon*

One of the fundamental justifications for property rights is that a forevership property right provides an incentive to owners to invest in their assets and protect their future value. Supposedly, “[t]he current market value of a fee in Blackacre is the discounted present value of the eternal stream of rights and duties that attach to Blackacre.”<sup>77</sup> This means that the benefits of a forevership are already included in the price of the asset in the present. Therefore, “[a] rational and self-interested fee owner . . . adopts a [sic] infinite planning horizon when considering how to use his parcel, and is spurred to install cost-justified permanent improvements and to avoid premature exploitation of resources.”<sup>78</sup> In

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<sup>75</sup> DUKEMINIER, KRIER, ALEXANDER, SCHILL & STRAHILEVITZ, *supra* note 13, at 215–16; Fennell, *supra* note 13. Note that some types of ownership rights are time limited. The first notable example is intellectual property. See Miriam Marcowitz-Bitton, Yotam Kaplan & Maayan Perel, *Recoupment Patent*, 98 N.C. L. REV. 481, 483 (2020) (describing the limited duration of patent rights); Miriam Marcowitz-Bitton & Yotam Kaplan, *Recalibrating Patent Protection for COVID-19 Vaccines: A Path to Affordable Access and Equitable Distribution*, 12 U.C. IRVINE L. REV. 423, 429 (2022). The second example concerns water rights under “prior appropriation,” which operates on a use-it-or-lose-it system rather than an indefinite time span. See BARTON H. THOMPSON, JR., JOHN D. LESHY, ROBERT H. ABRAMS & SANDRA B. ZELLMER, *LEGAL CONTROL OF WATER RESOURCES: CASES AND MATERIALS* 176 (6th ed. 2018) (“[O]ne can lose the right if the use ceases to be made. . . . [However, c]ourts in many jurisdictions have recognized a wide variety of excuses for non-use, so that the risk of losing a water right is much less in practice than it might appear on paper.”).

<sup>76</sup> Fennell, *supra* note 13, at 1468; see Epstein, *supra* note 65, at 669 (“[T]he party who takes first possession of a thing is entitled to exclude the rest of the world from it, forever.”).

<sup>77</sup> Ellickson, *supra* note 15, at 1369.

<sup>78</sup> *Id.* at 1369.

other words, owners want to maximize the future value of their assets because those future values are manifested in the current market values of their assets.

But this assumption holds only up to a point. To illustrate, assume that the owners of Greenacre are considering using pesticides that will greatly increase yields in the short term but will render the land barren in fifty years. The use of such pesticides will have a dramatic and immediate negative effect on the current value of Greenacre, so the owners will avoid them. The owners, who may want to sell Greenacre, or leave it to their children, do not want to reduce its future value. In this way, forevership indeed ensures efficient use of resources, as scholars suggest.<sup>79</sup> But this mechanism works only for the relatively near future. Assume now that the pesticides will indeed render the land barren but only in five hundred years. Under this assumption, a rational, self-interested owner will use harmful pesticides to enjoy higher short-term profits. The use of pesticides will not affect the welfare of the present owners or their children or grandchildren. Nor will it affect the market price of Greenacre; potential buyers, like the original owners, will be indifferent to the state of Greenacre in five hundred years. Even if Greenacre remains with the current owners' heirs indefinitely, the heirs who will hold it in five hundred years are complete strangers to the current owners, and the current owners will not consider their welfare in deciding whether to use the pesticides.

This is true because of the temporal utility function of the current owners. Far enough into the future, a rational current owner benefits only marginally from any investment in the asset, or lack thereof. Even using a low discount rate in combination with a relatively long-time horizon suggests that there is a point beyond which individuals are indifferent to the costs and benefits of their investment and consumption decisions.<sup>80</sup>

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<sup>79</sup> Ellickson, *supra* note 15, at 1368–69.

<sup>80</sup> See Eduardo M. Peñalver, *Land Virtues*, 94 CORNELL L. REV. 821, 854–57 (2009) (showing there is an “inherent incompleteness” in our “evaluative horizon”). Peñalver notes that the present value of a future stream of benefits is only of marginal benefit to the current landowner. Eventually, it becomes so marginal that it is not significant enough to compel one to act. To illustrate, Peñalver discusses the following example: The application of a constant discount rate of 5% would mean that the loss of life of one individual in a year would be evaluated higher than the death of one billion individuals in five hundred years. Thus, the effect of discounting on long-term decisions is such that the interests of distant future generations will barely register in the minds of current landowners. See *id.* at 854 & n.132; see also Richard L. Revesz, *Environmental Regulation, Cost-Benefit Analysis, and the Discounting of Human Lives*, 99 COLUM. L. REV. 941, 1001 (1999); Shane Frederick, George Loewenstein & Ted O'Donoghue, *Time Discounting and Time Preference: A Critical Review*, 40 J. ECON. LITERATURE 351, 393–94 (2002) (reviewing the literature showing that market participants tend to discount future outcomes and impacts). This problem is further exacerbated by the fact that individuals tend to apply higher discount rates. *Id.* at 389 (noting the “predominance of high implicit discount rates”).

In other words, the current value of long-term benefits is negligible. Once benefits are so distant in time, they are no longer relevant to decision-making.<sup>81</sup> Rational owners in the present may consider the effects of their actions on the near, but not the distant, future.

Property rights indeed last forever, but their ability to resolve the temporal aspect of the tragedy of the commons is limited to the relatively near future. Forevership does not truly induce the current owner to adopt an “infinite planning horizon,” as scholars claim;<sup>82</sup> rather, it only induces them to consider changes in the value of Greenacre that are relevant to the contemporary holders or potential buyers. In other words, beyond some point in time, the “everlasting” property right can no longer effectively align the owner’s interest with that of the public. We cannot pinpoint the exact location of this time horizon. We can say with some confidence, however, that granting a forevership induces current owners to care about the value of their assets fifty years in the future, but probably not five hundred years; somewhere between these two time points lies the temporal horizon of the effectiveness of the “everlasting” property right.

The temporal horizon of forevership has important implications for understanding property rights. As mentioned, property rights in the Anglo-American tradition last forever. However, their effects in inducing efficient use by current owners are relatively time limited, meaning that the temporal tragedy of the commons reappears even after property rights are introduced. Even if property rights are in place, owners will tend to use their resources without considering long-term effects far into the future and will fail to consider the interests of future generations. The result is that while right holders may be motivated to enhance revenue streams in the near future or medium term, the further in the future these revenues are, the less likely they are to care or act to maximize the value of the asset. Far enough into the future, the fundamental justification for property rights simply does not hold.

Worse, indefinite property rights not only fail to solve the temporal tragedy of the commons, but they might also exacerbate it. As noted, the common belief is that everlasting property rights overcome the temporal tragedy of the commons and ensure the conservation of resources. By creating this illusion, property rights give a false impression that the problem is solved or does not exist.<sup>83</sup> This makes the temporal tragedy of

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<sup>81</sup> See Peñalver, *supra* note 80, at 854 (“Within their own private cost-benefit analyses, then, private owners are likely dramatically to underweigh—relative to short-term consequences—costs (or gains) arising from their land-use choices when those effects are projected to occur far into the future.”).

<sup>82</sup> See Ellickson, *supra* note 15, at 1369.

<sup>83</sup> See *id.*

the commons more intractable, harder to recognize, and more difficult to mitigate.

The fact that far enough into the future our incentives diminish does not mean that the motivation to invest does not exist for the near future or that property is useless in creating incentives for investment altogether. Indeed, a time horizon that is not too short is necessary to motivate people to care about and invest in the asset. Think of a time in your life when you lived in a short-term rental. Would you invest in hanging pictures on the walls, upgrading the electrical wiring, or installing a pricy solar panel? Probably not, or at least not as much as you would if you were planning on living there longer. It may also be the case that an infinite duration encourages owners to think in terms of longer time periods rather than shorter ones and, in that sense, is useful at least in extending the investment horizon.<sup>84</sup> The intuition behind the property timeline thus still holds; it just does not hold forever.

### B. *The Biased Time Horizon*

We have shown above that even if owners are fully rational, forevership does not truly solve the temporal tragedy of the commons and does not induce owners to fully consider the interests of future generations, as opposed to those of near-term future owners. In this Section, we show that the ability of property rights to solve the temporal tragedy of the commons is even more limited when the possibility of cognitive biases is included in the analysis.

Many behavioral studies have pointed out biases in our temporal perceptions and decision-making processes. In addition to considering how decision makers consider present and future rewards, evidence from the field of cognitive psychology shows that the way we perceive ourselves and our emotions over time, and the way we perceive time itself, may also influence intertemporal decision-making.<sup>85</sup> Different biases hinder people's ability to identify with their future selves and cause them to prefer short-term benefits over long-term interests.<sup>86</sup> We refer to these

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<sup>84</sup> Katrina M. Wyman, *In Defense of the Fee Simple*, 93 NOTRE DAME L. REV. 1, 34 (2017) (“[T]he endless duration of the fee simple should encourage owners to think longer term than an interest of shorter and limited duration, as it provides a mechanism for owners to internalize the benefits and costs of their decisions over the long haul.”).

<sup>85</sup> Hal E. Herschfield, *Future Self-Continuity: How Conceptions of the Future Self Transform Intertemporal Choice*, 1235 ANNALS N.Y. ACAD. SCIENCES 30, 30–35 (2011) (reviewing the literature on how one's self-perception can significantly impact intertemporal decision-making).

<sup>86</sup> In the context of climate change and finance, the inability to internalize temporal spillovers has been termed a “tragedy of the horizon.” Mark Carney, Governor of the Bank of Eng., Chairman

biases collectively as present-day biases.<sup>87</sup> Such biases have clear implications for decision-making<sup>88</sup> and for owners' behavior in managing their property. If cognitive biases prevent the owners of Greenacre from fully identifying with their future selves, it will cause them to prefer present, short-term gains, overconsume, and underinvest in the future value of their property.

The effect of present-day biases is often illustrated by studies on retirement savings. In a well-known study, participants were asked to indicate how much they were willing to invest—in the present—in their retirement funds, the benefits of which would be reaped in the future. Before deciding how much to invest, some of the participants were shown a computerized “avatar” of themselves at age seventy, while members of the control group (randomly selected) were not shown such a rendered image.<sup>89</sup> The study found that participants who had been virtually exposed to their future selves had contributed twice as much to their retirement as did participants in the control group.<sup>90</sup>

A failure of imagination on the temporal dimension appears to fundamentally change our decision-making process and affect its outcomes. This cognitive limitation of our temporal decision-making is pervasive and persistent. Anyone who has put off a task or postponed a workout until next week has experienced a form of this bias. Even in those small tasks, the way we perceive ourselves in time may influence intertemporal decision-making.<sup>91</sup> There is increasing empirical evidence

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of the Fin. Stability Bd., *Breaking the Tragedy of the Horizon—Climate Change and Financial Stability 2–3* (Sept. 29, 2015), <https://www.bis.org/review/r151009a.pdf> [<https://perma.cc/4T2V-R4CX>].

<sup>87</sup> The problem of present bias is defined as “the tendency of people to give stronger weight to payoffs that are closer to the present time when considering trade-offs between two future moments. . . . The concept of present bias is often used more generally to describe impatience or immediate gratification in decision-making.” *Present Bias*, BEHAVIORALECONOMICS.COM (citation omitted), <https://www.behavioraleconomics.com/resources/mini-encyclopedia-of-be/present-bias> [<https://perma.cc/Z2MB-N4AF>]. For a general discussion of cognition bias that may influence future generations, in particular with respect to environmental decision-making, see John-Oliver Engler, David J. Abson & Henrik von Wehrden, *Navigating Cognition Biases in the Search of Sustainability*, 48 *AMBIO* 605, 605–06 (2019).

<sup>88</sup> Hershfield, *supra* note 85, at 33.

<sup>89</sup> Hal E. Hershfield et al., *Increasing Saving Behavior Through Age-Progressed Renderings of the Future Self*, 48 *J. MKTG. RSCH.* S23, S26–27 (2011) (“[T]he mirror image tracked and reflected six degrees of freedom such that when the participant moved in physical space, his or her avatar moved in perfect synchrony in the mirror.”).

<sup>90</sup> *Id.* at S28 (“[P]articipants who were exposed to their future selves in virtual reality allocated more than twice as much money to the retirement account ( $M = \$172$ ,  $SD = \$214$ ) than participants who were exposed to their current selves ( $M = \$80$ ,  $SD = \$130$  . . .).”).

<sup>91</sup> See generally Hershfield, *supra* note 85.

that we not only disconnect our present selves from our future selves, but also perceive and treat our future selves as someone else altogether.<sup>92</sup>

These cognitive limitations reinforce the temporal tragedy of the commons. Even if one owner supposedly holds an asset indefinitely, the tragedy of the commons resurfaces, as “multiple selves” share the asset over time. Thus, we make decisions that favor our current self, even if this means retaining a small benefit now instead of a much larger one for our future self, which we consider to be a stranger.<sup>93</sup> This cognitive tendency also has a biological explanation. The human brain is wired to respond better to direct and present threats than to future, potential ones.<sup>94</sup> Individuals systematically favor their present self in pursuit of short-term gain over their future interests and long-term goals.<sup>95</sup> Such tendencies are

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<sup>92</sup> Hal E. Hershfield, *The Self Over Time*, 26 CURRENT OP. PSYCHOLOGY 72, 72–73 (2019) (“[T]hinking about a self in ten years’ time elicits a similar neural pattern to that which occurs when we think about another person. . . . [T]he general idea is the following: People are inherently self-interested . . . . [I]f in fact, the future self feels like or seems like a stranger, then it may make sense to place more weight on the present over the future when making decisions that have consequences at different points in time . . . .”); Joseph S. Reiff, Hal E. Hershfield & Jordi Quoidbach, *Identity Over Time: Perceived Similarity Between Selves Predicts Well-Being 10 Years Later*, 11 SOC. PSYCH. & PERSONALITY SCI. 160, 160 (2020); Emily Pronin, Christopher Y. Olivola & Kathleen A. Kennedy, *Doing unto Future Selves as You Would Do unto Others: Psychological Distance and Decision Making*, 34 PERSONALITY & SOC. PSYCH. BULL. 224, 224 (2008); Emily Pronin & Lee Ross, *Temporal Differences in Trait Self-Ascription: When the Self Is Seen as an Other*, 90 J. PERSONALITY & SOC. PSYCH. 197, 197 (2006).

<sup>93</sup> Hershfield, *supra* note 85, at 33.

<sup>94</sup> Emma R. Norman & Rafael Delfin, *Wizards Under Uncertainty: Cognitive Biases, Threat Assessment, and Misjudgments in Policy Making*, 40 POL. & POL’Y 369, 380 (2012) (“Like many species, a large part of the human brain is devoted to respond to immediate threats. In evolutionary terms, humans have learned to predict the future and avoid threats that are not yet coming only relatively recently, and the neural networks responsible are concomitantly small.”). These findings are supported by evidence at the neural level, highlighting that thoughts regarding one’s future self and thoughts regarding another person elicit similar neural activity, as compared to thoughts regarding one’s current self. See Hershfield, *supra* note 85, at 32–33; Jason P. Mitchell, Jessica Schirmer, Daniel L. Ames & Daniel T. Gilbert, *Medial Prefrontal Cortex Predicts Intertemporal Choice*, 23 J. COGNITIVE NEUROSCIENCE 857 (2011) (using fMRI scans to show that people tend to make shortsighted decisions that favor small present benefits over larger future ones because they fail to fully engage in self-referential processing when they think about their future selves).

<sup>95</sup> See, e.g., Eve-Marie C. Blouin-Hudon & Timothy A. Pychyl, *Experiencing the Temporally Extended Self: Initial Support for the Role of Affective States, Vivid Mental Imagery, and Future Self-Continuity in the Prediction of Academic Procrastination*, 86 PERSONALITY & INDIVIDUAL DIFFERENCES 50, 51 (2015); Fuschia Sirois & Timothy Pychyl, *Procrastination and the Priority of Short-Term Mood Regulation: Consequences for Future Self*, 7 SOC. & PERSONALITY PSYCH. COMPASS 115, 116 (2013) (“[W]e prioritize our current mood over the consequences of our inaction for our future self.”).

well documented in many contexts, including saving for retirement,<sup>96</sup> procrastination,<sup>97</sup> exercise,<sup>98</sup> and weight loss.<sup>99</sup>

It is important for our discussion to note that present-day biases are greatly exacerbated the further people are required to project their self-image into the future.<sup>100</sup> The further in the future our decision-making is expected to affect us, the more difficult it is for us to imagine its effects.<sup>101</sup> Thus, if we are bad at deciding something that may affect us in a year (recall the examples of putting off a task or workout), we are even worse at making decisions that affect us and others a few decades hence.<sup>102</sup>

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<sup>96</sup> See Hal Ersner-Hershfield, M. Tess Garton, Kacey Ballard, Gregory R. Samanez-Larkin & Brian Knutson, *Don't Stop Thinking About Tomorrow: Individual Differences in Future Self-Continuity Account for Saving*, 4 JUDGMENT & DECISION MAKING 280 (2009). The amendment of 26 U.S.C. § 401(k)(13)(C)(i)—requiring employers to enroll their employees in a default pension plan unless they choose otherwise—is a familiar example of the legislature's intervention in people's choices, which are sometimes inconsistent with their longer-term goals.

<sup>97</sup> See Eve-Marie C. Blouin-Hudon & Timothy A. Pychyl, *A Mental Imagery Intervention to Increase Future Self-Continuity and Reduce Procrastination*, 66 APPLIED PSYCH. 326, 327 (2017) (finding that “[p]rocrastination is negatively associated with a future time perspective such that consequences for future self are ignored while present states are favoured”).

<sup>98</sup> See Abraham M. Rutchick, Michael L. Slepian, Monica O. Reyes, Lindsay N. Pleskus & Hal E. Hershfield, *Future Self-Continuity Is Associated with Improved Health and Increases Exercise Behavior*, 24 J. EXPERIMENTAL PSYCH. 72 (2018).

<sup>99</sup> See Hsu-Chan Kuo, Chun-Chia Lee & Wen-Bin Chiou, *The Power of the Virtual Ideal Self in Weight Control: Weight-Reduced Avatars Can Enhance the Tendency to Delay Gratification and Regulate Dietary Practices*, 19 CYBERPSYCHOLOGY BEHAV. & SOC. NETWORKING 80 (2016).

<sup>100</sup> A possible explanation for this is that future experiences are generally perceived in our minds as more abstract and less tangible. See Hershfield, *supra* note 85, at 35 (showing in an experiment that a neurobiological reaction toward the future self is similar to the reaction toward strangers); Todd D. Nelson, *Ageism: Prejudice Against Our Feared Future Self*, 61 J. SOC. ISSUES 207, 214–15 (2005) (suggesting that people refrain from thinking of themselves in the future to avoid fear of death and old age); see also Mitchell, Schirmer, Ames & Gilbert, *supra* note 94, at 3–4, 8 (conducting two studies to investigate the neural underpinnings of shortsighted decision-making and highlight that the level of activity in the part of the brain associated with introspective, self-referential processing predicted the degree to which individuals made shortsighted decisions regarding money, which could vary between people). A different explanation may be that people have a tendency to positively try to avoid imagining their future selves due to negative stereotypes associated with aging, as well as their preference to avoid thinking about death. See Nelson, *supra*, at 214–15 (“[O]ur thoughts of our own mortality spark feelings of intense anxiety (tied to our fear of dying) and . . . we will try to distance ourselves from anything (or any person/group) that reminds us of our mortality. In so doing, the young perceiver convinces him/her self [sic] that such a fate is not in his/her own future, thus alleviating the anxiety.”). But see Kimberly A Wade-Benzoni, *Legacy Motivations & the Psychology of Intergenerational Decisions*, 26 CURRENT OP. PSYCHOLOGY 19, 21 (2019) (arguing that death awareness can also become an effective means for creating a feeling of social responsibility toward future generations because it may prompt people to strive and transcend their own existence by “feel[ing] a part of something that will live on after them”).

<sup>101</sup> Sasha Brietzke & Meghan L. Meyer, *Temporal Self-Compression: Behavioral and Neural Evidence That Past and Future Selves Are Compressed as They Move Away from the Present*, 118 PROC. NAT'L ACAD. SCIENCES, 2021, at 1.

<sup>102</sup> See *id.*

Decisions that affect the distant future are exceptionally difficult to make also because of their inherent uncertainty.<sup>103</sup> Cognitive and informational limitations therefore impede effective decision-making. Temporal spillover effects are difficult to assess and calculate.<sup>104</sup> The further in the future the harm is, the more difficult it is to evaluate.<sup>105</sup> This is true, for example, for actions such as drilling for oil and gas<sup>106</sup> or capturing the benefits of agglomeration in urban areas.<sup>107</sup>

All of this combined makes it inherently difficult for us to act on behalf of our future selves, and it makes it even more difficult (or, cognitively, nearly impossible) to act empathically toward future generations, particularly those unknown and unrelated to us.<sup>108</sup> These natural cognitive limitations make the scholarly consensus, according to which property right holders will consider an “infinite planning horizon,”<sup>109</sup> all the more unlikely.

### III. THE TEMPORAL MISMATCH

Our analysis above has shown that forevership does not truly solve the temporal tragedy of the commons, at least not for the distant future. Current owners do not care about the value of their assets five hundred years from now, so granting them a forevership does not induce them to

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<sup>103</sup> See Michael A. Livermore, *Patience Is an Economic Virtue: Real Options, Natural Resources, and Offshore Oil*, 84 U. COLO. L. REV. 581, 591 (2013) (“The owner of resources often faces uncertainty over the costs and benefits of development. These uncertainties can be due to fluctuations in commodity prices, the unknown effects of development on complex ecosystems, or gaps in scientific understanding about human health.”).

<sup>104</sup> See Huber, *supra* note 20, at 44 (“Environmental harms that manifest over time are difficult to internalize. They may be unknown and/or unknowable.”).

<sup>105</sup> *Id.*

<sup>106</sup> See Livermore, *supra* note 103, at 593–97 (discussing option value in the context of decisions regarding offshore oil and gas drilling in the United States).

<sup>107</sup> Fennell, *supra* note 13, at 1479–81 (pointing out that the rigidity of “perpetual estates” makes it difficult to realize the benefits of agglomeration in cities, and stating that “the fee simple’s infinite duration carried fewer costs and produced greater benefits in the low-density agrarian society for which it was designed than it does in today’s thoroughly urbanized society”).

<sup>108</sup> Whereas the former is characterized by temporal distance, the latter entails the unique combination of both temporal and personal distance. See Rose Meleady & Richard J. Crisp, *Redefining Climate Change Inaction as Temporal Intergroup Bias: Temporally Adapted Interventions for Reducing Prejudice May Help Elicit Environmental Protection*, 53 J. ENV’T PSYCH. 206, 206–07 (2017); see also Benedikt P. Langenbach, Branislav Savic, Thomas Baumgartner, Annika M. Wyss & Daria Knoch, *Mentalizing with the Future: Electrical Stimulation of the Right TPJ Increases Sustainable Decision-Making*, 146 CORTEX 227, 228 (2022) (noting that, as opposed to interactions with others in the present, the effects of our behavior “are temporally distant and future generations cannot reciprocate”).

<sup>109</sup> Ellickson, *supra* note 15, at 1369.



invest optimally and avoid overuse when such long time frames are considered.

Another way to protect the interests of future generations would be to limit the power of current property holders. The law often restricts property rights, and such restrictions could theoretically be used to explicitly direct current property holders to avoid overconsumption and to generally consider the interests of future generations. As we show below, however, existing restrictions on property rights largely fail in this regard. This is because restrictions on property rights tend to focus on the present or near future and are not designed to limit property rights in the way necessary for protecting stakeholders far into the future. In this sense, the fundamental structure of property law provides a troubling temporal mismatch: property rights are given forever, but the corresponding duties of the right holder to prevent the abuse of property rights are primarily focused on the present and near future.

#### A. Existing Property Law Doctrines

“Property rights are not absolute.”<sup>110</sup> Property law provides mechanisms that limit the owner’s rights and ensure that owners consider the interests of others.<sup>111</sup> The nuisance doctrine<sup>112</sup> is a classic example of this, intended to force owners to consider the legitimate interests of their

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<sup>110</sup> Bruce Pardy, *Eviscerating Property in the Name of Sustainability*, 3 J. HUM. RTS. & ENVIRONMENT 292, 295 (2012) (reviewing PROPERTY RIGHTS AND SUSTAINABILITY: THE EVOLUTION OF PROPERTY RIGHTS TO MEET ECOLOGICAL CHALLENGES (David Grinlinton & Prue Taylor eds., 2011)); Duncan Kennedy, *Form and Substance in Private Law Adjudication*, 89 HARV. L. REV. 1685, 1730 (1976) (explaining that law granted rights “and also provided the basis for limiting the right[s]”); Joseph William Singer, *Property and Social Relations: From Title to Entitlement*, in PROPERTY LAW ON THE THRESHOLD OF THE 21ST CENTURY 69–70 (G.E. van Maanen & A.J. van der Walt eds., 1996) (“The owner’s right to exclude and her power to transfer may conflict with—and may be limited by—the public’s rights of access to the market without discrimination based on race or sex or disability.”).

<sup>111</sup> See Thomas W. Merrill, *The Property Strategy*, 160 U. PA. L. REV. 2061, 2063 (2012) (“The general form of the property relationship . . . is one of decentralized control over resources. Specific resources are assigned to designated persons who have unique prerogatives in dealing with the resource relative to all other persons in the relevant normative community.”); Henry E. Smith, *Property as the Law of Things*, 125 HARV. L. REV. 1691, 1693–94 (2012); cf. J.E. Penner, *The “Bundle of Rights” Picture of Property*, 43 UCLA L. REV. 711, 712 (1996) (“In its conventional formulation, the bundle of rights thesis is a combination of Wesley Hohfeld’s analysis of rights and A.M. Honore’s description of the incidents of ownership. According to Hohfeld, any right in rem should be regarded as a myriad of personal rights between individuals. Thus my ownership of a car should not be regarded as a legal relation between me and a thing, the car, but as a series of rights I hold against all others, each of whom has a correlative duty not to interfere with my ownership of the car, by damaging it, or stealing it, and so on.” (footnotes omitted)).

<sup>112</sup> See Smith, *supra* note 6.

neighbors, and to some extent, the interests of the general public.<sup>113</sup> These limitations protect mostly the interests of current stakeholders, however, and not those of future generations.<sup>114</sup> If owners use their land in ways that would render it unusable in the distant future, the future owner cannot bring a nuisance claim against the present one. The doctrine of nuisance does not give a voice to absentee claimants. There simply are not many ways to protect the interests of those that are not here (yet). This creates a fundamental mismatch between the temporal horizon of the entitlement, which is forever, and the effectiveness of any restriction on that right, which is conspicuously time limited.<sup>115</sup>

Property law also imposes restrictions or conditions on future transfers of title. A fee-tail estate, for example, imposes restrictions on the transfer of title down the line.<sup>116</sup> The same is true of the rule against perpetuities, now largely abolished in many U.S. states and in the United Kingdom.<sup>117</sup> These doctrines restrict certain types of transfers and, in this sense, affect future generations. Yet, these doctrines, to the extent they remain in effect today, impose restrictions only on the future transferability of assets. They were never intended to impose direct obligations on present holders toward future generations. If anything, the opposite is true: these doctrines impose restrictions on future generations based on the wishes of present holders.

The traditional common law doctrine of waste did consider future owners to some extent. The doctrine originated in twelfth-century feudal England<sup>118</sup> and later found its way across the Atlantic into U.S. law.<sup>119</sup> Its primary goal was to mediate conflicts between right holders who had a legal interest in the same asset at different times. The doctrine was thus intended to address temporal rather than spatial spillovers.<sup>120</sup> The common example of such an intertemporal spillover is between the holder of a fee simple and the holder of a lease or a life estate. The latter

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<sup>113</sup> Epstein, *supra* note 14, at 12–16.

<sup>114</sup> See *id.* at 10.

<sup>115</sup> See *id.* at 29–30.

<sup>116</sup> See THOMAS W. MERRILL & HENRY E. SMITH, *PROPERTY: PRINCIPLES AND POLICIES* 511–12 (3d ed. 2017).

<sup>117</sup> See DUKEMINIER, KRIER, ALEXANDER, SCHILL & STRAHILEVITZ, *supra* note 13, at 328–41.

<sup>118</sup> See MERRILL & SMITH, *supra* note 116, at 555; Thomas W. Merrill, *Melms v. Pabst Brewing Co. and the Doctrine of Waste in American Property Law*, 94 MARQ. L. REV. 1055, 1056 (2011); see also Amelia Thorpe, *Property and Planning*, in *THE ROUTLEDGE HANDBOOK OF PROPERTY, LAW AND SOCIETY* 389, 393 (Nicole Graham, Margaret Davies & Lee Godden eds., 2022) (explaining the origins of the doctrine in relation to wood scarcity in England).

<sup>119</sup> See Huber, *supra* note 20, at 45; see also DUKEMINIER, KRIER, ALEXANDER, SCHILL & STRAHILEVITZ, *supra* note 13, at 239, 242; Thorpe, *supra* note 118, at 393 (explaining changes in the doctrine following its transfer from England to the United States, considering “much greater availability of land and a growing emphasis on economic development”).

<sup>120</sup> Thorpe, *supra* note 118, at 393.

is currently in possession of the asset, while the former holds the remainder, which is the right that will remain after the current possessor's right expires.<sup>121</sup> In such circumstances, the present holder has an incentive to favor shorter-term investments and overuse the asset without considering the interests of the next owner.<sup>122</sup> In extreme cases, there is concern that the holder-in-possession will completely waste the resource, leaving nothing for the remainder. Therefore, the doctrine of waste allows a plaintiff, typically the remainder holder, to bring a claim against a current right holder who damaged or destroyed real property through wasteful use.

A waste action is a preventative action brought in court by a holder of a future right who is not currently in possession of the asset. The purpose of the action is to prevent a current holder, who is in possession, from acts that may result in harm, deterioration, or material change to a property through misuse, use, or neglect.<sup>123</sup> As William Blackstone put it, “[w]hatever does a lasting damage to the freehold or inheritance is waste.”<sup>124</sup>

Several early common law cases of waste dealt with agricultural activities, particularly with cutting down trees. Timber was an important economic resource, and there was a strong interest in protecting it. In these cases, the holder-in-possession, with short-term interests in mind, generally sought to begin or intensify timber harvesting, while the holder

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<sup>121</sup> This is sometimes known as “reversion,” since the asset reverts back to the owner. MERRILL & SMITH, *supra* note 116, at 512–13.

<sup>122</sup> *See id.* at 548.

<sup>123</sup> Merrill, *supra* note 118, at 1056. There are three varieties of waste, categorized as affirmative (or voluntary), permissive, and ameliorative. *See id.* at 1057. First, affirmative waste covers actions, such as destroying or altering part of a building. *See Dorsey v. Speelman*, 459 P.2d 416, 418 (Wash. Ct. App. 1969) (describing how the interior walls and ceilings were removed from a property); *Rumiche Corp. v. Eisenreich*, 352 N.E.2d 125, 127–28 (N.Y. 1976) (same); *Green v. Keen*, 4 Md. 98, 102 (1853) (describing the cutting down of wood without justifiable cause); *Bond v. Godsey*, 39 S.E. 216, 217 (Va. 1901) (describing the extraction of oil, gas, or other minerals from the land). The “open mine doctrine” is an exception to affirmative waste, allowing the life tenant to continue to operate an existing mine without this being considered waste. *See Youngman v. Shular*, 288 S.W.2d 495 (Tex. 1956); Donald P. Butler, *The Open Mine Doctrine*, 8 HOUS. L. REV. 753 (1971). Second, permissive waste occurs when an individual has failed to perform an act, meaning it is a type of nonfeasance, for example, if the tenant allows the house to fall into disrepair while they are in possession. *See Merrill, supra* note 118, at 1057. Lastly, ameliorative waste arises when a holder-in-possession materially alters the asset without permission. *See Merrill & Smith, supra* note 116, at 556. Ameliorative waste covers actions, such as restoring a dilapidated building, *see, e.g., City of London v. Greyme* (1607) 79 Eng. Rep. 158 (KB), demolishing houses and erecting others in their place, *see, e.g., Cole v. Green* (1669) 83 Eng. Rep. 422 (KB), or changing the use of the land, *see, e.g., J.H. Bellows Co. v. Covell*, 162 N.E. 621, 621–22 (Ohio Ct. App. 1927); *Meux v. Copley* (1892) 2 Ch. 253 (Eng.).

<sup>124</sup> 2 WILLIAM BLACKSTONE, COMMENTARIES \*281; *see also* 1 EDWARD COKE, THE FIRST PART OF THE INSTITUTES OF THE LAWS OF ENGLAND § 67, at 53.a–53.b (Francis Hargrave & Charles Butler eds., 18th ed. 1823).

of a future interest objected. Early cases on both sides of the Atlantic generally held that cutting down trees for repairs or firewood was permissible but commencing commercial timber operations was not.<sup>125</sup> Later American cases, however, have tended to allow commercial timber activities.<sup>126</sup>

Early common law cases were also concerned with changing the purpose for which the land was used, whether by changing the purpose of the land from forest to field or from field to residential, or vice versa, adding new buildings or opening new mines.<sup>127</sup>

Over time, American law developed two versions of the doctrine of waste, or two distinct tests for its application. These two dominant views of the law of waste can be illustrated with two leading cases from the late 1800s and early 1900s.

The first case, *Brokaw v. Fairchild*,<sup>128</sup> concerned a mansion in Manhattan, on the corner of 79th Street and 5th Avenue. The mansion was bequeathed by Isaac Brokaw to his son, George, on a life estate, with the remainder going to George's children, or if he had none, to the other

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<sup>125</sup> See *Webster v. Webster*, 33 N.H. 18, 25–26 (1856) (establishing that a right holder cutting down trees for firewood could not be held liable under waste); see also Merrill, *supra* note 118, at 1092 (offering an alternative interpretation of the early tree-related cases based on what an agricultural right holder would “normally” do); Jedediah Purdy, *The American Transformation of Waste Doctrine: A Pluralist Interpretation*, 91 CORNELL L. REV. 653, 663 (2006) (“Unless explicitly excused, tenants could take from the land only the timber that was necessary for maintaining buildings, making tools, and warming themselves in winter . . .”).

<sup>126</sup> See, e.g., *Robinson v. Hunter*, 562 S.E.2d 189, 190–91 (Ga. Ct. App. 2002) (noting that cutting down timber and receiving proceeds from the timber is permissible if harvesting is not “solely for profit” and if the activities generally conform with “good husbandry” practices (quoting *Higgins v. State*, 199 S.E. 158, 158 (Ga. Ct. App. 1938))); *White v. Watts*, 812 So. 2d 328, 332 (Ala. 2001) (permitting the harvest of between 42% and 70% of trees on the farm); *Kennedy v. Kennedy*, 699 So. 2d 351, 357–61 (La. 1996) (on rehearing) (rejecting the “open mines” approach and holding that the possessor was allowed to cut and clear a 143-acre tract of “timberlands” that had never been harvested before); cf. *Jackson v. Brownson*, 7 Johns. 227 (N.Y. Sup. Ct. 1810) (holding that a longer-term interest holder could repossess the tract of land from the tenant because the latter had cut down the majority of previously “wild and uncultivated land”). See generally Purdy, *supra* note 125, at 668–73 (discussing *Jackson* and its centrality to the shifts in American waste doctrine); Lovett, *supra* note 22, at 1228 (“[R]ecent timber waste decisions confirm that American courts continue to favor interests of short term possessory estate holders who seek to commence or intensify commercial tree farming activity over preservationist oriented future interest holders’ pleas for selective cutting or no cutting at all.”).

<sup>127</sup> See Purdy, *supra* note 125, at 663 (“Waste law similarly restricted tenants’ power to change patterns of land use. . . . Tenants could not allow arable land to grow up into forest, transform a meadow into a garden or the reverse . . .”). Under the open mine doctrine, holders-in-possession were not allowed to open up new mines, but were allowed to keep using mines that were already open on the land. See *id.* (“Tenants also committed waste if they opened new mines on the land to search for hidden minerals, but they could continue using open mines for their own use.” (footnotes omitted)).

<sup>128</sup> 237 N.Y.S. 6 (Sup. Ct. 1929), *aff’d mem. per curiam*, 245 N.Y.S. 402 (App. Div. 1930), *aff’d mem. per curiam*, 177 N.E. 186 (N.Y. 1931).

grandchildren of Isaac.<sup>129</sup> George wanted to tear down the mansion.<sup>130</sup> Some of his nieces and nephews, who were Isaac's grandchildren and thus potential holders of the remainder, objected and brought a claim in waste to stop George from demolishing the house.<sup>131</sup> The New York County Supreme Court found in favor of the nieces and nephews, letting the mansion stand.<sup>132</sup> The court held that the right holder currently in possession "shall enjoy his estate in such a reasonable manner that the land shall pass to the reversioner or remainderman as nearly as practicable unimpaired in its nature, character, and improvements."<sup>133</sup> The court generally favored what we term the as-is approach to waste, under which the interim holder must keep the asset as is.<sup>134</sup>

A different approach to the doctrine of waste is found in a second case, *Melms v. Pabst Brewing Co.*,<sup>135</sup> which concerned a mansion in Wisconsin.<sup>136</sup> The current possessor, Pabst, who owned the surrounding property and believed he owned the mansion as well, tore the mansion down. The children of the late C.T. Melms, who were the rightful heirs of the mansion, filed a suit claiming that by doing so, Pabst had committed waste.<sup>137</sup> This time, the court rejected the claim of waste,<sup>138</sup> explaining that the mansion's destruction made economic sense, considering the change in the nature of the neighborhood surrounding it, which turned from residential to industrial.<sup>139</sup> The reasoning of the court is of particular interest. The court did not evaluate waste based on the as-is approach, but rather used a comparison of economic values, taking into account changed circumstances.<sup>140</sup> The Wisconsin Supreme Court held that "reasonable modifications [may be necessary as] demanded by the growth of civilization and varying conditions."<sup>141</sup> The court in *Melms* thus

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<sup>129</sup> *Id.* at 10–12.

<sup>130</sup> *Id.* at 11.

<sup>131</sup> *See id.* at 9, 11.

<sup>132</sup> *Id.* at 14 ("[S]uch demolition would result in such an injury to the inheritance as under the authorities would constitute waste."). The mansion was eventually taken down and replaced by a large apartment block in the 1960s, after George's death. *See* MERRILL & SMITH, *supra* note 116, at 555.

<sup>133</sup> *Brokaw*, 237 N.Y.S. at 14–15.

<sup>134</sup> *See id.*

<sup>135</sup> 79 N.W. 738 (Wis. 1899).

<sup>136</sup> For an in-depth historical review of the case and its background, see Merrill, *supra* note 118, at 1060–77.

<sup>137</sup> *Melms*, 79 N.W. at 739–40.

<sup>138</sup> *Id.* at 741.

<sup>139</sup> *Id.*

<sup>140</sup> *See id.* at 40. For a critique of the court's holding in *Melms*, see Merrill, *supra* note 118, at 1060–77, 1084–91 (arguing that the rule that emerged from *Melms* does not offer a useful baseline for private ordering and parties' negotiations).

<sup>141</sup> *Melms*, 79 N.W. at 739.

generally favored what we term a flexible approach to waste, stressing the fact that the neighborhood had changed as the key factor in the ruling. Given the change in the neighborhood, the court was convinced that the land was worth more, at that time, as an industrial plot than as a residential mansion.<sup>142</sup> When there has been “a complete and permanent change of surrounding conditions, which has deprived the property of its value and usefulness as previously used,” the holder-in-possession cannot be deemed to have wasted it by changing it in a way that increases its value.<sup>143</sup>

The flexible approach in *Melms* also aligns well with a strand of American cases from the early 1800s onward that generally allowed for converting wilderness areas into agricultural landscapes.<sup>144</sup> For example, in an 1800s case from Vermont, the court found that cutting down trees was not waste, unless it reduced the value of the land.<sup>145</sup> Courts generally assumed that a rational and self-interested fee holder would not resist the transformation of wilderness into agricultural or industrial land because the land would become more valuable after clearing the timber.<sup>146</sup> This approach was at least partly due to the homesteading ethos and the desire to farm and cultivate the American continent. The transition from wilderness to agriculture or industry was seen as part of the American transformation.<sup>147</sup>

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<sup>142</sup> *Id.* at 738 (noting that, at the time the case came before the Wisconsin Supreme Court, the court was convinced that the Melms mansion no longer had “practical value, and would not rent for enough to pay taxes and insurance thereon; whereas” if it were converted to an industrial plot, “its value would be largely enhanced”). But for a critique of this framing, see Merrill, *supra* note 118, at 1075–79 (arguing that Pabst himself—who was the holder-in-possession—had made changes that caused the reduction of value over time and had contributed to the change in nature from residential to industrial, and therefore, the presentation by the court of the analysis of the facts in this case was skewed).

<sup>143</sup> *Melms*, 79 N.W. at 741.

<sup>144</sup> See Purdy, *supra* note 125, at 654 (tracking how “[a] line of state supreme court cases, beginning in 1810, transformed the doctrine from the strict rule . . . to a flexible standard,” and highlighting the role of the desire to turn wilderness into an agrarian landscape in that transformation).

<sup>145</sup> *Keeler v. Eastman*, 11 Vt. 293, 294 (1839) (holding that cutting down trees was not waste if it did not cause permanent injury to the estate).

<sup>146</sup> Courts developed a standard of the prudent farmer, under which the action was not considered waste if it conformed with what a prudent owner in fee simple (that is, one who holds the rights in perpetuity), who was using the land for profit, would have done. Purdy, *supra* note 125, at 674 (“By this standard, a tenant’s actions were not waste if they comported with the behavior of a prudent fee-owner using his land for profit.”). This standard was then used to justify the move from wilderness to agrarian or industrial uses, based on the assumption that fee holders would not object if such a move increased the value of the land. *Id.* at 677 (“A rationally self-interested reversioner would not insist on keeping a plot of land in wilderness unless relative property values shifted so that at least some of the land had become more valuable in timber than after clearing.”).

<sup>147</sup> See *id.* at 690–94.

Thus, the doctrine of waste limits the right to use and consume real property and induces users to consider the future interests of others.<sup>148</sup> But the doctrine of waste considers only the interests of stakeholders that are close in time, not the interests of future generations. A claim of waste against a life tenant or a lessee can be brought to court only by an owner or by an owner of a vested future interest.<sup>149</sup> The doctrine of waste requires current holders to consider the interests of identifiable, immediate future holders,<sup>150</sup> not the interests of owners in the distant future.

Many American states still have statutes providing for waste action, including both injunctive relief and damages,<sup>151</sup> but waste lawsuits are rarely brought anymore.<sup>152</sup> Today, most of the issues that were previously addressed by the doctrine of waste are usually solved by other forms of governance. One example is trusts, used as a mechanism for holding assets for more than one generation, usually within the same family.<sup>153</sup> Other common examples include landlord-tenant regulations and zoning laws.<sup>154</sup> We discuss these below.

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<sup>148</sup> See Lovett, *supra* note 22, at 1211.

<sup>149</sup> See *id.*

<sup>150</sup> See *id.*

<sup>151</sup> See, e.g., MICH. COMP. LAWS ANN. § 600.2919(2)(a), (3)(b) (West 2023) (“Any . . . life tenant . . . who commits or suffers any waste . . . is liable for double the amount of actual damages.”); CAL. CIV. PROC. CODE § 732 (West 2023) (“If a guardian, conservator, tenant for life or years, joint tenant, or tenant in common of real property, commit[s] waste thereon, any person aggrieved by the waste may bring an action against him therefor, in which action there may be judgment for treble damages.”).

<sup>152</sup> In a search of all federal courts, since 2000, only twenty-one cases had mentioned claims of waste. Of those, only four were successful in establishing waste. *Bitler Inv. Venture II, LLC v. Marathon Petro. Co.*, 741 F.3d 832, 837–38 (7th Cir. 2014); *D.A.N. Joint Venture v. Binafard*, 116 F. App’x 93, 94–96 (9th Cir. 2004); *IMH Broadway Tower Senior Lender, LLC v. Hertz*, 415 F. Supp. 3d 455, 462 (S.D.N.Y. 2019).

<sup>153</sup> See Merrill, *supra* note 118, at 1085 (“[T]oday, if specific assets are conveyed to one person for life and then to one or more remaindermen after that person dies, this is nearly always done by creating a trust.”); see also JESSE DUKEMINIER, ROBERT H. SITKOFF & JAMES LINDGREN, *WILLS, TRUSTS, AND ESTATES* 553 (8th ed. 2009) (noting that conveying a life estate outside a trust today is “rare and almost always unwise”).

<sup>154</sup> See Thorpe, *supra* note 118, at 393 (“Waste, for instance, provided a mechanism to resolve disputes between successive and concurrent interests in land, and also to consider the implications of land use beyond individual boundaries. The doctrine of waste prohibited not only changes reducing the value of land but, with even greater penalties, changes *increasing* the value of land, such as converting meadow to farm land.” (citation omitted)).

### B. *Governance and Restrictions on Use*

The ability of owners to overuse resources at a given time can be regulated through governance mechanisms, beyond the traditional core of property law.<sup>155</sup> Consider zoning law, for example. The term “zoning” comes from the practice of categorizing land areas by their use, thus dividing them into zones.<sup>156</sup> Zones are created based on the type of activity that takes place in each zone, and uses are assigned to each zone based on the category of use. Certain restrictions are then imposed based on these categories.<sup>157</sup> New York City has been used as a traditional example because it represents one of the first successful zoning projects in the United States.<sup>158</sup> Zoning laws allow local governments to ensure that the use of land within a zone does not have negative effects on other zones in the municipality.<sup>159</sup> Planning law also regulates land use, although it does not adhere to such crisp Euclidean boundaries as zoning laws tend to do.<sup>160</sup> Under both zoning and planning law (which we use interchangeably below), a municipality can restrict, for example, the extent to which property holders can build, and specify where development can take place.<sup>161</sup>

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<sup>155</sup> “Governance” here is used in the sense that it differs from “exclusionary” mechanisms. See Henry E. Smith, *Exclusion Versus Governance: Two Strategies for Delineating Property Rights*, 31 J. LEGAL STUD. S453, S476 (2002).

<sup>156</sup> The traditional method of zoning is Euclidean Zoning. See MERRILL & SMITH, *supra* note 116, at 1067–69.

<sup>157</sup> See *id.* For example, New York City’s Zoning Resolution loosely divides New York into residential, commercial, and manufacturing districts. The ways in which one can use their land depend on the location of each zone, its population density, as well as the category of the zone. See N.Y.C., ZONING RESOLUTION art. I, ch. 1, § 11-121 (2023).

<sup>158</sup> Robert C. Ellickson, *Alternatives to Zoning: Covenants, Nuisance Rules, and Fines as Land Use Controls*, 40 U. CHI. L. REV. 681, 692 (1973).

<sup>159</sup> For example, the residential zones in New York are numerous and closely situated, so restricting those inhabitants from making unfettered agricultural use of their land would prevent nuisances, such as noise pollution, from being an issue across a majority of residential districts. See *New York City’s Zoning & Land Use Map*, NYC PLANNING: ZOLA, <https://zola.planning.nyc.gov/about/#9.72/40.7125/-73.733> [<https://perma.cc/2VMG-TN9A>].

<sup>160</sup> Non-Euclidean forms of zoning have been developed in several locations. Planned-unit development (PUD) is a system where property developers negotiate plans to develop an existing part of the municipality. ROBERT C. ELICKSON, VICKI BEEN, RODERICK M. HILLS, JR. & CHRISTOPHER SERKIN, *LAND USE CONTROLS: CASES AND MATERIALS* 358–59 (4th ed. 2013).

<sup>161</sup> Zoning and planning law are entangled with property law. Although zoning is sometimes seen as a matter of public policy and property as a more private matter, the reality is that the two mechanisms constantly interact and work together. See Thorpe, *supra* note 118; see also Fennell, *supra* note 13, at 1471 (“Landowners are often required [by land use regulations or covenants] to engage in certain affirmative acts for the benefit of those around them.”); Larissa Katz, *Governing Through Owners: How and Why Formal Private Property Rights Enhance State Power*, 160 U. PA. L. REV. 2029, 2050–51 (2012); Robert C. Ellickson, *The Affirmative Duties of Property Owners: An Essay for Tom Merrill*, 3 BRIGHAM-KANNER PROP. RTS. CONF. J. 43, 50–58 (2014).



The benefits of planning law include its ability to address potential spillover effects *ex ante*.<sup>162</sup> Unlike easements, which we discuss below,<sup>163</sup> zoning imposes mandatory requirements on landowners, and thus cannot be easily sidestepped. At the same time, scholars have criticized the rigidity of zoning because it encourages urban sprawl, negatively affecting the environment.<sup>164</sup> Zoning has also been criticized for its unequal distributional effect and its contribution to rising housing prices.<sup>165</sup>

Although the main purpose of zoning is to avoid spillover effects between neighborhoods and areas within the municipality, zoning does not have to be strictly limited to spatial spillovers. Theoretically, it can also address temporal spillovers.<sup>166</sup> Doing so, however, especially for the long term, does not seem to be its primary concern. To illustrate this

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<sup>162</sup> See MERRILL & SMITH, *supra* note 116, at 1091–92.

<sup>163</sup> See *infra* Section III.C.

<sup>164</sup> See, e.g., Christopher Serkin, *A Case for Zoning*, 96 NOTRE DAME L. REV. 749, 764 (2020) (“Today, people have become increasingly aware that these kinds of land use goals are actually environmentally harmful, and perhaps even catastrophically so. They promote large-lot zoning and the preservation of undeveloped land in every lot. Large-lot zoning produces suburban sprawl, increases vehicle miles traveled, and contributes substantially to climate change, the pressing environmental issue of our time. Indeed, most environmentalists today recognize that the best development patterns from an environmental perspective combine dense urban living with the preservation of large swaths of undeveloped land—the antithesis of sprawling large-lot suburban zones.” (emphasis added) (footnotes omitted)).

<sup>165</sup> See Christopher Serkin, *The Wicked Problem of Zoning*, 73 VAND. L. REV. 1879, 1890 (2020) (“[T]here is no question that zoning plays an important role in enhancing local property values, and indeed for some, that quality is its central animating purpose.”); John Mangin, *The New Exclusionary Zoning*, 25 STAN. L. & POL’Y REV. 91, 92–94 (2014) (noting the key issue is that zoning affects the supply of housing and land, and thus impacts demand and pricing accordingly); Fennell, *supra* note 13, at 1464 n.20 (discussing how zoning “may raise the cost of housing and office space by curtailing supply”); Daniel B. Rodriguez & David Schleicher, *The Location Market*, 19 GEO. MASON L. REV. 637, 645–47 (2012) (noting how “[z]oning decisions in individual cities can, when added up across a region, can [sic] cause the cost of housing and office space to increase,” and discussing empirical work that suggested that is, in fact, what has happened in several regions in the United States, especially “in several rich regions on the East and West Coasts,” and that “[i]n the most heavily regulated regions, the cost of housing is double the cost of producing housing, strongly suggesting that supply restrictions are sharply limiting the production of housing”).

<sup>166</sup> For example, in the case of New York City, legislative intent regarding residential use restrictions is explicitly stated as being designed “to meet the housing needs of the City’s present and expected future population” and also “to conserve the value of land.” N.Y.C., ZONING RESOLUTION art. II, ch. 1, § 21-00(a), (i) (2023). Theoretically, it is possible that because the location value of California-based assets is so high, future buyers could internalize (at least partially) the harm to land through reduced prices. Yet given all the reasons discussed above, including the fact that rational buyers will not care enough about the events far into the future and the cognitive biases that prevent them from doing so, that is not likely the case. We expect the same results, with regard to the lack of regard for future generations, to be replicated in other locales as well. We reserve the study of rural jurisdictions for later work.

point, we surveyed the ten largest municipalities in California.<sup>167</sup> For each municipality, we examined the general city plan and the zoning ordinances in its municipal code.<sup>168</sup> When we examined the stated purposes of the zoning ordinances, we found references only to the welfare of current stakeholders. Examination of the General Plan of the cities revealed the same picture. There were some references, albeit sparse, to future generations or populations, but the protection of future stakeholders was rarely the focus. For instance, the Los Angeles zoning ordinance makes no reference to future generations as part of the functions of the ordinance.<sup>169</sup> The San Francisco zoning ordinance also does not mention future generations in its list of purposes at all.<sup>170</sup>

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<sup>167</sup> Determined by the size of the population.

<sup>168</sup> In accordance with the California Code, every city in the state must have a General Plan, and zoning ordinances must comply with the city's General Plan. CAL. GOV'T CODE § 65860(a) (West 2023). The municipal ordinances are as follows: LONG BEACH, CAL., MUN. CODE tit. 21 (2023); *General Plan*, CITY OF LONG BEACH, <https://www.longbeach.gov/lbds/planning/advance/general-plan> [<https://perma.cc/VL5D-D8P9>]; L.A., CAL., MUN. CODE ch. 1 (2023); *General Plan Overview*, L.A. CITY PLANNING, <https://planning.lacity.org/plans-policies/general-plan-overview> [<https://perma.cc/9FCE-2SJ3>]; SAN DIEGO, CAL., MUN. CODE ch. 10–15 (2022); *General Plan*, CITY OF SAN DIEGO, <https://www.sandiego.gov/planning/work/general-plan#genplan> [<https://perma.cc/W84E-B8S6>]; S.F., CAL., PLANNING CODE (2023); S.F. GEN. PLAN, <https://generalplan.sfplanning.org/index.htm> [<https://perma.cc/AQJ4-V27D>]; SAN JOSE, CAL., MUN. CODE tit. 20 (2023); CITY OF SAN JOSE, ENVISION SAN JOSÉ 2040: GENERAL PLAN (2022), <https://www.sanjoseca.gov/home/showpublisheddocument/22359/638001271000400000> [<https://perma.cc/RL88-78G5>]; FRESNO, CAL., MUN. CODE ch. 15 (2023); DEV. & RES. MGMT. DEP'T, CITY OF FRESNO, FRESNO GENERAL PLAN (2022), [https://www.fresno.gov/darm/wp-content/uploads/sites/10/2022/12/upload\\_temp\\_Consolidated-GP-10-13-2022.pdf](https://www.fresno.gov/darm/wp-content/uploads/sites/10/2022/12/upload_temp_Consolidated-GP-10-13-2022.pdf) [<https://perma.cc/QA3C-PK4X>]; SACRAMENTO, CAL., CITY CODE tit. 17 (2023); *2035 General Plan*, CITY OF SACRAMENTO (Mar. 3, 2015), <http://www.cityofsacramento.org/Community-Development/Resources/Online-Library/2035--General-Plan> [<https://perma.cc/WD4L-M4DG>]; OAKLAND, CAL., PLANNING CODE tit. 17 (2022); *City of Oakland Current General Plan*, CITY OF OAKLAND, <https://www.oaklandca.gov/topics/city-of-oakland-general-plan> [<https://perma.cc/9VZ6-Q6MH>]; BAKERSFIELD, CAL., MUN. CODE tit. 17 (2023); CITY OF BAKERSFIELD, METROPOLITAN BAKERSFIELD GENERAL PLAN (2016), <https://content.civicplus.com/api/assets/37a2e20d-e610-431f-a222-9f4f2ecd2ddd> [<https://perma.cc/V4KF-Y6VH>]; ANAHEIM, CAL., MUN. CODE tit. 18 (2022); *General Plan*, CITY OF ANAHEIM (2022), <https://www.anaheim.net/712/General-Plan> [<https://perma.cc/398X-FRPH>].

<sup>169</sup> L.A., CAL., MUN. CODE ch. 1 (2023). Even considering the General Plan, the only reference to the interests of future generations appears in the section on cultural and historical conservation. CONSERVATION ELEMENT OF THE CITY OF LOS ANGELES GENERAL PLAN § 5 (2001), [https://planning.lacity.org/odocument/28af7e21-ffdd-4f26-84e6-dfa967b2a1ee/Conservation\\_Element.pdf](https://planning.lacity.org/odocument/28af7e21-ffdd-4f26-84e6-dfa967b2a1ee/Conservation_Element.pdf) [<https://perma.cc/S8LT-CQX7>].

<sup>170</sup> S.F., CAL., PLANNING CODE art. 1, § 101 (2023). Future generations are mentioned, briefly, in some of the sub-elements of the San Francisco General Plan. The Urban Design Element notes that “[n]atural areas must be kept undeveloped for the enjoyment of future generations.” *Urban Design Element*, S.F. GEN. PLAN, at Objective 2, [https://sfgov.org/sfplanningarchive/ftp/General\\_Plan/I5\\_Urban\\_Design.htm#URB\\_CPN\\_1\\_2](https://sfgov.org/sfplanningarchive/ftp/General_Plan/I5_Urban_Design.htm#URB_CPN_1_2) [<https://perma.cc/34KA-QRZU>]. The Environmental Protection Element states that the relevant policies were adopted on the basis that

An outlier in this regard is Long Beach, which mentions future generations twice in its General Plan and emphasizes natural resource conservation and sustainable use.<sup>171</sup> Zoning in Long Beach is intended to serve the purpose of the General Plan, and thus should include at least some consideration of the interests of future generations.<sup>172</sup> The extent of that consideration, however, appears to be limited. There is no reference to the interests of future generations in the list of purposes for the Long Beach Zoning Ordinance in Title 21. Only a limited number of considerations are listed explicitly, none of which are directly related to the welfare of future generations. For example, one goal is to “achieve excellence of design in all future developments and to preserve the natural beauty of the City’s environmental setting,”<sup>173</sup> but this appears to be purely aesthetic. All references in the list of goals to the people themselves are to current residents only.<sup>174</sup> This suggests that the primary concern of zoning under this ordinance has to do with spatial spillovers, rather than intertemporal ones.<sup>175</sup>

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resources “should be managed in ways that will assure their availability for generations to come.” *Environmental Protection Element*, S.F. GEN. PLAN, [https://generalplan.sfplanning.org/I6\\_Environmental\\_Protection.htm](https://generalplan.sfplanning.org/I6_Environmental_Protection.htm) [<https://perma.cc/93NP-9G86>]. Recently, the Housing Element stated that “sufficient housing for existing residents and future generations” should be provided. S.F. PLANNING, HOUSING ELEMENT: 2022 UPDATE, at Goal 4 (2022), <https://www.sfhousingelement.org/final-draft-housing-element-2022-update-clean> [<https://perma.cc/FFD4-W2PX>]. The attention to future generations in each element, however, is limited to the scope of that particular section and the particular interests it covers.

<sup>171</sup> First, in the provisions regarding conservation, which were adopted in 1973, it is stated that “[t]he conservation of our natural resources is essential if we are to maintain a quality environment for future generations.” CITY OF LONG BEACH, CONSERVATION ELEMENT: CITY OF LONG BEACH GENERAL PLAN PROGRAM 4 (1973), <https://longbeach.gov/globalassets/lbds/media-library/documents/planning/advance/general-plan/1973-conservation-element> [<https://perma.cc/QX4H-3D2B>]. Second, in the Land Use Element of the General Plan, adopted in 2019, it is stated that a key goal is to preserve natural resources because “[t]he City is committed to preserving and restoring damaged and degraded water bodies, natural areas and wildlife habitats for present and future generations to learn from and enjoy.” LONG BEACH DEV. SERVS., LAND USE ELEMENT: CITY OF LONG BEACH GENERAL PLAN 124 (2019), <https://longbeach.gov/globalassets/lbds/media-library/documents/planning/advance/lueude/land-use-element-final-adopted-december-2019> [<https://perma.cc/2PBW-9CZ8>]. Indeed, a key goal of the General Plan has to do with sustainability, and the definition of sustainability that is given in the General Plan’s appendix includes the ability to meet the needs of future generations. *Id.* at 188.

<sup>172</sup> See LONG BEACH, CAL., MUN. CODE § 21.10.020 (2023).

<sup>173</sup> *Id.* § 21.10.020(G).

<sup>174</sup> See *id.* § 21.10.020(N) (stating that the objective of locating and controlling land use is “so that no noise, vibration, electrical disturbance, smoke, gaseous or particulate matter, odor, glare, heat, radioactivity, biological material, dust, nor hazard is generated,” in order to not “adversely affect adjacent properties or uses”).

<sup>175</sup> It may be the case that city policies incidentally affect future generations, even if that was not their primary goal. For example, even if a zoning restriction on commercial or manufacturing districts protects future generations, those zoning restrictions are ultimately aimed at “the needs of

In addition to zoning, several other environmental regulations may compel property holders to take the interests of future generations into account. For example, under certain circumstances, the Endangered Species Act<sup>176</sup> could regulate the actions of current right holders that affect fish, wildlife, and plant life.<sup>177</sup> The Secretary of the Interior may list certain species of animals as endangered or threatened,<sup>178</sup> and habitats will be designated for those species accordingly.<sup>179</sup> This is significant for our purpose because once a critical habitat has been designated, restrictions apply to it, affecting how landowners can use their property. For example, if the development of land would harm, wound, capture, collect, or interfere with the behavior of the species in that critical habitat, the development would be restricted.<sup>180</sup> In *Weyerhaeuser Co. v. United States Fish and Wildlife Service*,<sup>181</sup> private land owned by the petitioner was subject to the critical-habitat designation. Consequently, the petitioner's ability to use or develop the land as it wished was restricted.<sup>182</sup>

Other examples of mechanisms relating to future interest holders may include, for example, a mechanism within the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), which allows the President and the Environmental Protection Agency to identify sites releasing hazardous levels of waste, known as Superfund sites.<sup>183</sup> Owners of Superfund sites are either encouraged to control their hazardous waste, or an agency-led cleanup is

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the city's expected future economy," as New York City's legislative intent for commercial and manufacturing districts explains. But these incidental effects on future generations are limited. See N.Y.C., ZONING RESOLUTION art. III, ch. 1, § 31-00 (2022); *id.* at art. IV, ch. 1, § 41-00.

<sup>176</sup> Endangered Species Act of 1973, 16 U.S.C §§ 1531–1544.

<sup>177</sup> Future generations are not explicitly mentioned in the Endangered Species Act. *Id.* Section 1533(a)(1)(A) only considers the "present or threatened destruction, modification, or curtailment" of the habitats, meaning the Act only considers immediate or imminent threats and not the far future.

<sup>178</sup> *Id.* § 1533(c)(1). For these designated species, there are prohibitions on their taking, sale, importing, exporting, etc. *Id.* § 1538(a). Here, taking means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." *Id.* § 1532(19).

<sup>179</sup> The Secretary will, following the designation of a species as endangered, designate the habitat of said species as a critical habitat. *Id.* § 1533(a)(3)(A)(i). When the Secretary determines the designation of an endangered species, the factors that it must consider include whether the species is likely to face extinction "within the foreseeable future." *Id.* § 1533(b)(1)(B)(ii).

<sup>180</sup> Development in designated habitats requires special permits issued by federal agencies. *Id.* § 1536. The U.S. Fish and Wildlife Service is charged with the protection of land-based habitats, and the National Oceanic and Atmospheric Administration is charged with the protection of marine-based habitats.

<sup>181</sup> 139 S. Ct. 361 (2018).

<sup>182</sup> The restrictions on the petitioner's ability to use and develop the land would have resulted in losses for the petitioner of up to \$33.9 million. *Id.* at 362.

<sup>183</sup> Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9601–9675.

initiated, financed by a dedicated fund.<sup>184</sup> Similarly, the Leaking Underground Storage Tank Trust Fund, financed by taxes on the sale of motor fuel, uses its funds to oversee petroleum cleanups, enforce cleanups, or conduct inspections and implement preventative measures.<sup>185</sup>

Returning to the temporal tragedy of the commons: these governance mechanisms could be helpful, but in practice do not fully address the temporal mismatch and tend to focus mostly on the near future. This tendency can be explained by three related reasons. First, existing governance mechanisms often focus primarily on future neighbors rather than future successors in title. Consideration of future legal successors is, ostensibly, done “within” the fee simple forevership and is therefore often not addressed through governance mechanisms such as zoning and planning law. Second, zoning and environmental regulations are enacted by public officials, who are, or can be, subject to capture.<sup>186</sup> The intuition here is quite simple: Public officials respond to interests and problems that concern and affect their constituents.<sup>187</sup> Voters, in turn, are individuals who exist in the here and now. Simply put, since our great-great-grandchildren cannot (yet) vote, it is unlikely that public officials will consider their interests when making rules and regulations.<sup>188</sup> Third, even if public policymakers wanted to consider future generations, they may encounter the same problems described above, of biases toward the present and misjudgment of the future.<sup>189</sup> Policymakers are not necessarily immune to cognitive biases that cause individual decision makers to favor short-term gains.<sup>190</sup>

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<sup>184</sup> See *id.* § 9606 (stipulating the power to seek costs from Superfund sites). Note that some parts of CERCLA have been amended. See generally Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499, 100 Stat. 1613.

<sup>185</sup> *Leaking Underground Storage Tank (LUST) Trust Fund*, EPA (Oct. 3, 2022), <https://www.epa.gov/ust/leaking-underground-storage-tank-lust-trust-fund> [<https://perma.cc/7F2N-GPKA>].

<sup>186</sup> See Richard A. Posner, *Regulation (Agencies) Versus Litigation (Courts): An Analytical Framework*, in REGULATION VS. LITIGATION: PERSPECTIVES FROM ECONOMICS AND LAW 11, 19 (Daniel P. Kessler ed., 2011) (explaining the phenomenon of regulatory capture in terms of the incentives of public regulators).

<sup>187</sup> See Huber, *supra* note 20, at 44 (“The more distant the harms in time, . . . the less likely that presently elected officials may feel obligated to address them.”).

<sup>188</sup> *Id.*

<sup>189</sup> See Samuel Issacharoff, *Behavioral Decision Theory in the Court of Public Law*, 87 CORNELL L. REV. 671, 671 (2002); William N. Eskridge, Jr. & John Ferejohn, *Structuring Lawmaking to Reduce Cognitive Bias: A Critical View*, 87 CORNELL L. REV. 616, 620–21 (2002).

<sup>190</sup> See, e.g., Timur Kuran & Cass R. Sunstein, *Availability Cascades and Risk Regulation*, 51 STAN. L. REV. 683, 752 (1999); W. Kip Viscusi & Ted Gayer, *Behavioral Public Choice: The Behavioral Paradox of Government Policy*, 38 HARV. J.L. & PUB. POL’Y 973, 988–96 (2015) (applying behavioral insights to state policy).

### C. Voluntary Obligations

The ability of property holders to use their rights can be limited through voluntary obligations. Such restrictions bind current right holders to obligations assumed by their predecessors or their past selves. These restrictions can include, for example, conservation easements that may bind current right holders for the benefit of future holders and future third parties.<sup>191</sup> Conservation easements are nonpossessory property rights that restrict a landowner's use of a parcel of land to achieve a conservation benefit.<sup>192</sup> For example, a conservation easement may be agreed upon between the owner of a wetland and the easement holder, in which the parties can define the exact boundaries of the wetland, or be established to protect a particular habitat or species.<sup>193</sup>

Twenty-one states have adopted a form of the Uniform Conservation Easement Act, which specifies the acceptable purposes of a conservation easement.<sup>194</sup> But because conservation easements are voluntary, the scope of what is restricted (or permitted) under a particular conservation easement varies and depends on what was agreed between the parties at the time the easement was established.<sup>195</sup> Modifying an easement once it has been established is generally not an easy or quick process.<sup>196</sup>

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<sup>191</sup> Currently, evidence regarding the effectiveness of conservation easements in solving temporal spillovers is mixed. See Sarah Jacobson, *Temporal Spillovers in Land Conservation*, 107 J. ECON. BEHAV. & ORG. 366 (2014) (showing that conservation easements can have some positive impacts, but that those effects can be reversed once the public programs that establish the easements come to an end); Adena R. Rissman et al., *Conservation Easements: Biodiversity Protection and Private Use*, 21 CONSERVATION BIOLOGY 709, 716 (2007).

<sup>192</sup> Jessica Owley, *Conservation Easements at the Climate Change Crossroads*, 74 LAW & CONTEMP. PROBS. 199, 199 (2011). In a conservation easement agreement, a landowner sells or donates certain proprietary use rights to the easement holder while continuing to retain the fee simple. These legally binding voluntary agreements are entered into between private landowners and actors that are qualified to hold them, namely government agencies or land trusts. Kelly Kay, *Breaking the Bundle of Rights: Conservation Easements and the Legal Geographies of Individuating Nature*, 48 ENV'T & PLAN. A 504, 504 (2016).

<sup>193</sup> Federico Cheever, *Public Good and Private Magic in the Law of Land Trusts and Conservation Easements: A Happy Present and a Troubled Future*, 73 DENV. U. L. REV. 1077, 1086 (1996).

<sup>194</sup> Owley, *supra* note 192, at 203–04.

<sup>195</sup> *Id.* at 203 (highlighting the flexibility of conservation easements, which can be set for specific goals, like protecting a particular species, or for a general purpose, like conserving the land).

<sup>196</sup> Perpetual conservation easements did not become a commonly used land protection tool until the mid-1980s. Accordingly, courts have only recently started dealing with important questions regarding their modification and termination. Nancy A. McLaughlin, *Conservation Easements: Perpetuity and Beyond*, 34 ECOLOGY L.Q. 673, 676 (2007).

In the United States, a total of approximately forty million acres of land are reportedly under conservation easements.<sup>197</sup> Conservation easements are a tool of choice for land trusts, which are government or private nonprofit actors “committed to biological [, historical], or aesthetic preservation.”<sup>198</sup> Many conservation easements are donated as charitable gifts, in whole or in part, providing landowners considerable tax benefits.<sup>199</sup>

It is important to note for our purposes that conservation easements can and often are established as perpetual easements.<sup>200</sup> They typically “run with the land,” in other words, the terms of the easement remain in effect even if the encumbered land is sold or divided.<sup>201</sup> Thus, if the original parties establish the conservation easements as perpetual, they may prohibit or restrict certain activities on the land indefinitely.<sup>202</sup>

Although voluntary obligations serve important functions, they cannot obligate present owners to consider the interests of future generations. Because they are voluntary, such limitations cannot force owners to forgo their present interests in order to protect the welfare of future generations.

#### IV. REFORMING THE FUTURE OF PROPERTY

In this Part, we explore the possibility of reforming existing limitations on property rights so that these legal instruments better represent the interests of future generations. This move is intended to mitigate the mismatch described above between everlasting property rights and the relatively short-termed duties that accompany these rights.

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<sup>197</sup> Federico Cheever & Jessica Owley, *Enhancing Conservation Options: An Argument for Statutory Recognition of Options to Purchase Conservation Easements (OPCEs)*, 47 ENV'T L. REP. NEWS & ANALYSIS 10655, 10655 (2017). While conservation easements “are more prevalent in North America, . . . similar policies have been increasingly implemented throughout the world.” Catherine M.H. Keske, Parker Arnold, Jennifer E. Cross & Christopher T. Bastian, *Does Conservation Ethic Include Intergenerational Bequest? A Random Utility Model Analysis of Conservation Easements and Agricultural Landowners*, 86 RURAL SOCIO. 703, 705 (2021).

<sup>198</sup> See Cheever, *supra* note 193, at 1083–84. Scholars have cited a number of motivations for landowners to enter into conservation easements, such as environmental ethics and values, or a personal history with the land. Keske, Arnold, Cross & Bastian, *supra* note 197, at 706. Tax considerations also play a key motivating role. McLaughlin, *supra* note 196, at 675.

<sup>199</sup> McLaughlin, *supra* note 196, at 675. Apart from donations, conservation easements can also be sold for money or created as part of development approval processes. *Id.*

<sup>200</sup> *Id.*

<sup>201</sup> Kay, *supra* note 192, at 505; see Cheever, *supra* note 193, at 1078.

<sup>202</sup> Cheever, *supra* note 193, at 1078; see also Owley, *supra* note 192, at 201 (highlighting debates regarding the usefulness of conservation easements as a mechanism for preservation, considering their inflexibility).

It also provides a path forward for both scholars and policymakers to consider the interests of future generations and the urgent need to address the current climate crisis.

We do not propose to undermine property law or redesign the entire property system. Our goal is simply to consider ways to give future generations a greater say in our current system, and to do so in a way that better serves the goals of property itself. Similarly, our intention here is not to present a definitive outline of doctrinal reforms, an endeavor that is likely to require further development of the law on a case-by-case basis. Rather, our purpose is to provide the doctrinal framework that will allow discussions to move forward, and more generally, to outline the main challenges that such reform would need to consider, challenges that arise from the need to extend the influence of existing doctrines further into the future.

#### A. *Extending the Temporal Bounds of Property Law*

By recalibrating legal mechanisms such as the doctrine of waste, the doctrine of public trust, and the concept of abuse of rights, we propose a new version of property law that can solve the temporal tragedy of the commons. Below, we examine three proposals for doctrinal reform to stimulate further discussion of potential solutions along similar lines. The first proposal is to rethink the doctrine of waste by expanding its temporal reach. The second is to expand the doctrine of abuse of rights, again over longer periods of time. The third is to apply a fiduciary model, somewhat similar to the public trust doctrine, again incorporating obligations over a longer time horizon.

##### 1. Recalibrating the Doctrine of Waste

As noted above, the doctrine of waste, which is rarely invoked today, calls on users to consider the interests of future stakeholders.<sup>203</sup> In its current form, however, the doctrine of waste considers only the interests of future right holders who are relatively close in time to current owners, and therefore does not effectively represent the interests of future generations. We therefore propose a new version of the doctrine of waste that better protects the interests of future generations. The reformed version recognizes long-term effects on property, not only immediate

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<sup>203</sup> See *supra* text accompanying notes 118–54 (discussing the waste action and its implementation in the United States throughout the years).



harms relevant to holders of remainders and similar property interests.<sup>204</sup> The crux of the idea is that future generations, or realistically, someone on their behalf, can bring a claim in waste to prevent overuse and overconsumption by property owners.

We suggest that this new version of the waste doctrine should be based on the flexible approach to the law of waste, rather than on the as-is approach, because it better serves the goal of protecting the interests of future generations, while placing fewer restrictions on the rights of current holders. Recall that the flexible approach to waste, as expressed in the *Melms v. Pabst Brewing Co.* ruling,<sup>205</sup> allows for modification of assets by current users as long as it is reasonable and required to improve the value of the asset.<sup>206</sup> Reasonableness is assessed according to “varying conditions” and “change[s] of surrounding conditions.”<sup>207</sup> The reasonableness of any substantial overhaul of the asset must also be sensitive to economic considerations and the value of the asset over time.<sup>208</sup> This flexible test means that current right holders will not be encumbered by a claim of waste, even if they make massive changes to the asset, as long as those changes take into account the interests of future generations and are necessary to protect the value of the asset. The flexible approach is therefore more sensitive to the needs of current right holders by allowing them to make changes to their assets.

The flexible approach to waste law is also preferred because it can incorporate changing economic, environmental, and social conditions into the calculus. This approach allows for the degree of flexibility needed to protect the interests of generations well into the future when conditions might be vastly different than they are today. The flexible waste doctrine is, therefore, preferable to the stricter as-is version of waste law, which requires that assets remain largely unchanged by current owners.

The doctrine of waste is highly relevant to our discussion because it was originally created to mitigate intertemporal conflicts between interest holders, as opposed to spatial conflicts of interest between contemporary neighbors. The temporal aspect, therefore, plays a fundamental role in this doctrine. The flexible approach presented in the *Melms* ruling interpreted the time aspect as a call to expand the considerations relevant to the application of the doctrine of waste, which, as the court explained, requires a degree of flexibility for the interests of both the present and

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<sup>204</sup> Current literature on the doctrine of waste explains various aspects of it but does not expand the temporal horizon in the way we suggest here. See *supra* text accompanying notes 118–54.

<sup>205</sup> 79 N.W. 738 (Wis. 1899).

<sup>206</sup> See Merrill, *supra* note 118.

<sup>207</sup> *Id.* at 1073, 1075 (first quoting *Melms*, 79 N.W. at 739; and then quoting *id.* at 741).

<sup>208</sup> *But cf. id.* at 1079 (critiquing the court’s reasoning in *Melms* in this regard).

future right holders—interests that may arise and change over time. The basic structure of waste doctrine, together with the understanding that property interests are dynamic and change over time, can provide a framework for resolving the conflict between the rights of current owners and future third parties, whose rights in the property may be severely affected by the decisions of the current owners.

We, therefore, propose to use this basic structure of the law of waste but extend it so that the doctrine can consider the interests of right holders further into the future, not only those of the immediate subsequent owners.<sup>209</sup>

## 2. Expanding the Temporal Boundaries of the Public Trust Doctrine

In the landmark case of *Juliana v. United States*, the Federal District Court of Oregon refused to dismiss a lawsuit brought by young plaintiffs who alleged that the federal government's fossil fuel policies, which resulted in high levels of greenhouse gas emissions, violated their constitutional rights to due process and equal protection. The district court denied the government's motion to dismiss the suit and allowed the plaintiffs to proceed and go to trial.<sup>210</sup> Although the case was eventually dismissed by a panel in the Ninth Circuit and a petition to appeal was denied,<sup>211</sup> the decision of the district court leaves an important footprint on the landscape of environmental and climate case law.<sup>212</sup> For our purposes, it is particularly significant that in its decision, the district court invoked the doctrine of public trust.<sup>213</sup> As illustrated in *Juliana*, this doctrine, a modernized version of rules dating back to Roman law and

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<sup>209</sup> This proposed modified version of the doctrine of waste could nicely dovetail with people's desire to leave a positive legacy to future generations. See, e.g., Wade-Benzoni, *supra* note 100, at 19–20. Thus, a legal mechanism designed to assure long-term accountability in the use of resources on the personal level could harness people's desire to leave a better world behind them and reinforce this preference.

<sup>210</sup> *Juliana v. United States*, 217 F. Supp. 3d 1224, 1250, 1252 (D. Or. 2016), *rev'd*, 947 F.3d 1159 (9th Cir. 2020).

<sup>211</sup> *Juliana*, 947 F.3d at 1171 (“[I]t is beyond the power of an Article III court to order, design, supervise, or implement the plaintiffs’ requested remedial plan. As the opinions of their experts make plain, any effective plan would necessarily require a host of complex policy decisions entrusted, for better or worse, to the wisdom and discretion of the executive and legislative branches.”). A petition filed thereafter was also denied. *Juliana v. United States*, 986 F.3d 1295 (9th Cir. 2021).

<sup>212</sup> Michael C. Blumm & Mary Christina Wood, “No Ordinary Lawsuit”: *Climate Change, Due Process, and the Public Trust Doctrine*, 67 AM. U. L. REV. 1, 9 (2017) (“*Juliana* . . . signal[s] a significant change to environmental law at the outset of an era in which the federal government seems quite prepared to wage a potentially deadly gamble with the future of young people.”).

<sup>213</sup> For a thorough analysis of *Juliana* as illustrative of the use of the public trust doctrine, see *id.*

the Magna Carta,<sup>214</sup> is used to designate government actors as trustees of essential resources.<sup>215</sup> The doctrine views the state as having a fiduciary duty to protect such resources for the benefit of its people.<sup>216</sup> The type of resource stewardship envisioned today under the public trust doctrine is thought to include sustainable management, ideally with a view to maintaining the resources over time.<sup>217</sup> It has been suggested that to apply this doctrine appropriately, courts can ensure that a decision allowing trust interests to be impaired must show a consideration of legislative judgment<sup>218</sup> or show that it is based on a less disruptive solution.<sup>219</sup> As the *Juliana* case shows, although some courts have found that the trust responsibility constitutionally requires the legislature to act for a public purpose, others have been less willing to accept this notion of responsibility in public trust claims.<sup>220</sup>

The doctrine leaves open the possibility of considering future people and generations. We propose to expand the temporal limits of the doctrine to consider the interests of future people and owners, further into the future. Our suggestion is consistent with the main rationale underlying the doctrine, which is the idea that resources should be held on behalf and for the benefit of others and managed accordingly.<sup>221</sup> In this sense, our proposal does not require a profound conceptual change of the doctrine, but rather a shift in its emphasis and in the way it is applied.

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<sup>214</sup> The fundamental principles of the public trust doctrine date back to Roman law and were analyzed in *Illinois Central Railroad Co. v. Illinois*, 146 U.S. 387, 435 (1892). Since the 1970s, the doctrine has received increased attention, especially in the environmental context, following Joseph Sax's influential article. Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471 (1970). Sax offers a review of the origins of the public trust doctrine and its early history in American law. *Id.* at 475; see also Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711, 727–30 (1986). For a review of the history of *Illinois Central*, see Joseph D. Kearney & Thomas W. Merrill, *The Origins of the American Public Trust Doctrine: What Really Happened in Illinois Central*, 71 U. CHI. L. REV. 799 (2004).

<sup>215</sup> Blumm & Wood, *supra* note 212, at 22. For discussions of the benefits and shortcomings of the public trust doctrine, see Richard J. Lazarus, *Changing Conceptions of Property and Sovereignty in Natural Resources: Questioning the Public Trust Doctrine*, 71 IOWA L. REV. 631 (1986); James L. Huffman, *Avoiding the Takings Clause Through the Myth of Public Rights: The Public Trust and Reserved Rights Doctrines at Work*, 3 J. LAND USE & ENV'T L. 171 (1987); Kearney & Merrill, *supra* note 214.

<sup>216</sup> See Joseph L. Sax, *Liberating the Public Trust Doctrine from Its Historical Shackles*, 14 U.C. DAVIS L. REV. 185, 185 (1980); Blumm & Wood, *supra* note 212, at 22.

<sup>217</sup> See Sam Kalen, *The Coastal Zone Management Act of Today: Does Sustainability Have a Chance?*, 15 SE. ENV'T L.J. 191, 212–14 (2006).

<sup>218</sup> See Sax, *supra* note 216, at 194.

<sup>219</sup> *Id.*

<sup>220</sup> *Id.* at 193. See generally *Juliana v. United States*, 986 F.3d 1295 (9th Cir. 2021).

<sup>221</sup> See Sax, *supra* note 216, at 185.

Building on the ethos of trust, the idea of holding resources in trust for future generations could be applied to private owners as well,<sup>222</sup> and current interest holders could be viewed as having fiduciary obligations toward future generations. Although these future beneficiaries do not yet exist, and are therefore, by definition, a matter of probability, the result of these obligations could be that owners must take into account their future beneficiaries.

### 3. Extending the Doctrine of Abuse of Rights

An adjusted version of the abuse of rights doctrine may serve as another way to represent the interests of future generations. The intuition behind the abuse of rights doctrine is that right holders should not be allowed to use their rights in a way that is malicious, spiteful, or yields unlawful leverage.<sup>223</sup> The doctrine is applied in a variety of contexts and situations and is used, for example, to combat frivolous lawsuits and prevent owners from erecting spite fences.<sup>224</sup>

Much of the literature and case law on the doctrine is devoted to offering different views on the scope and conditions for asserting the abuse of rights doctrine and its justifications.<sup>225</sup> This is because there is some conceptual difficulty in treating right holders using their legal entitlement as wrongdoers. Even if the use of a right is harmful to others, it does not necessarily mean that the right is being abused; it is in the nature of rights that they favor right holders over non-holders, thereby “harming” non-holders who are excluded from certain resources or

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<sup>222</sup> As opposed to the doctrine of waste, the doctrine of public trust is specifically designed to deal with constraints and protections with regard to properties held by public entities, held on trust for the people. *See id.*

<sup>223</sup> *See* Larissa Katz, *Spite and Extortion: A Jurisdictional Principle of Abuse of Property Right*, 122 YALE L.J. 1444, 1451 (2013) (“[A]n owner necessarily exceeds her jurisdiction when she makes an otherwise permitted decision about a thing just for the reason that it will harm others.”).

<sup>224</sup> *See, e.g.*, *Brownstone Condo. Ass’n v. Geller*, 415 N.E.2d 20 (Ill. App. Ct. 1980) (finding that the developer’s suit against the neighbor, to remove nine bolts in a wall, was spiteful); Katz, *supra* note 223, at 1446, 1458–59 (describing the incident of a Brooklyn developer who erected a steel statue, which blocked the windows of the neighboring plot, for the sole purpose of using the statue as leverage over the neighboring landowner); MICHAEL TAGGART, PRIVATE PROPERTY AND ABUSE OF RIGHTS IN VICTORIAN ENGLAND: THE STORY OF EDWARD PICKLES AND THE BRADFORD WATER SUPPLY (2002) (discussing the famous case of *Mayor of Bradford v. Pickles*, [1895] AC 587 (HL), where the town of Bradford had alleged that Pickles spitefully diverted water away from the town).

<sup>225</sup> *See, e.g.*, Katz, *supra* note 223, at 1448–52; Joseph M. Perillo, Abuse of Rights: A Pervasive Legal Concept, 27 Pac. L.J. 37, 38–47 (1995); Anna di Robilant, Abuse of Rights: The Continental Drug and the Common Law, 61 Hastings L.J. 687, 688–95 (2010); A.N. Yiannopoulos, Civil Liability for Abuse of Right: Something Old, Something New . . . , 54 La. L. Rev. 1173, 1192–93 (1994). The doctrine is even more strongly recognized in continental legal systems. For a review of the doctrine in both common law and continental systems, see Taggart, *supra* note 224.

entitlements. Courts and scholars thus explain that the abuse of rights doctrine is usually applied when right holders attempt to use their rights out of spite,<sup>226</sup> for the sole purpose of harming others rather than to maximize the right holder's gains.<sup>227</sup> Similarly, the doctrine may be used when the court believes that the right holder is using the right in a way designed to unfairly extort benefits from others.<sup>228</sup>

The basic logic of the doctrine can be applied to the interests of future generations. In situations where current owners deliberately and maliciously take actions that harm future holders, an abuse of rights could be found, especially if minimal effort is required on the part of the current holder to avoid that harm. In this way, the doctrine would be expanded in time to include claims not only by current stakeholders, but by future ones as well.

The advantage of this proposal is that it imposes a fairly modest limitation on the power of current owners, and accordingly a relatively light burden on them. We envision it could address primarily those cases that require minimal effort on the part of the current owner but would result in significant harm for future generations if that effort is not made. If a current owner can easily avoid an action that would result in significant harm in the future, all things considered, that action should be avoided.<sup>229</sup>

### B. *Implementing the Proposed Reforms*

The doctrinal tools described above all require the creation of appropriate procedural foundations to support their operation. Therefore, we explore the possibility of using the doctrines of waste, public trust, and abuse of rights to induce current right holders to consider the interests of future generations. For these doctrines to work under this new modality, we must first identify the appropriate institutional actors who will be allowed to bring such claims to court and

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<sup>226</sup> See, e.g., *Brownstone Condo. Ass'n*, 415 N.E.2d at 22 (“This . . . is a spite case.”).

<sup>227</sup> See, e.g., *Panton v. Holland*, 17 Johns. 92 (N.Y. Sup. Ct. 1819) (holding that malice could be actionable, although in that case, malice was not substantiated); *Burke v. Smith*, 37 N.W. 838, 838–39 (Mich. 1888) (finding that a fence that was built only to “shut[] out the light and air” is a nuisance); *Hornsby v. Smith*, 13 S.E.2d 20, 24 (Ga. 1941) (“[I]t is our opinion that malicious use of property resulting in injury to another is never a ‘lawful use’ . . .”).

<sup>228</sup> See *Katz*, *supra* note 223, at 1463–67 (reviewing and discussing several cases where rights were used as illegitimate leverage).

<sup>229</sup> To illustrate the intuition, consider the following: You are standing in the kitchen, eating a banana. You can toss the peel directly in the trash or you can leave it on the floor, thus creating a potential risk for others in the future (albeit in this example, the near future). Tossing the banana peel in the trash would require only minimal effort on your part but will avoid a potentially large harm for others down the road.

represent the interests of future generations. For example, under our proposed version of the doctrine, if current owners are using their asset in a way that will lead to its destruction five hundred years hence, this could be considered wasteful. To make this theoretical violation of the right of future generations actionable in court, we must grant some contemporary actor the power to bring a claim in the matter before the court. The same is true for the doctrines of public trust, abuse of rights, and any other doctrinal mechanism that seeks to allow court claims designed to protect the interests of future generations.

One way to address this issue is to recognize a special procedural mechanism by which plaintiffs can assert private law claims on behalf of future generations. For example, a trustee or guardian could be appointed either by the court or by some public process. This proposal is reminiscent of similar ones in the area of animal rights, and of the growing debate over the rights of nature, where guardianship and trustee-like mechanisms are used to assert claims on behalf of those who otherwise cannot speak for themselves.<sup>230</sup>

Alternatively, such a mechanism could operate through the established devices of representative legal claims, similar to a class action.<sup>231</sup> Under such a scheme, any claimant may file a claim with the court in the name of future shareholders if the court considers the claimant to be an appropriate representative of future interests.<sup>232</sup> Such consideration may take into account, for example, the claimant's knowledge on the subject matter of the particular action, the claimant's ability to present persuasive and relevant evidence regarding harms

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<sup>230</sup> The idea of using a trustee as a way to overcome a procedural difficulty where the "real" plaintiffs are unable to bring their own claim has been proposed in the context of property rights for animals. See Karen Bradshaw, *Animal Property Rights*, 89 U. COLO. L. REV. 809, 830 (2018) (suggesting that animals will hold rights in land, which will be "held in trust or by a corporation, managed by humans acting with a fiduciary duty to animals"). For a similar discussion regarding the rights of nature, see Mauricio Guim & Michael A. Livermore, *Where Nature's Rights Go Wrong*, 107 VA. L. REV. 1347, 1391 (2021), who explain and analyze the notion of "guardianship," under which "individual non-humans and biological aggregates would be appointed guardians who could speak on their behalf. We could imagine that the duty of these guardians (which they carry out in good faith) would be to maximize the well-being of their charges . . . understood in objective terms."

<sup>231</sup> For an explanation of such mechanisms, see, for example, Alon Harel & Alex Stein, *Auctioning for Loyalty: Selection and Monitoring of Class Counsel*, 22 YALE L. & POL'Y REV. 69, 71 (2004).

<sup>232</sup> We propose that this move is consistent with historical developments in the law of waste. In early English waste cases, courts held that "only those holding indefeasibly vested remainders or reversions had standing to bring an action for waste," but later however, this strict requirement was relaxed, and "holders of contingent remainders, defeasible reversions, or executory interests were allowed to sue, provided they sued on behalf of all nonpossessory interest holders." MERRILL & SMITH, *supra* note 116, at 555.

accruing in the distant future,<sup>233</sup> and the claimant's lack of a current interest in the assets at issue.

Such a procedural mechanism creates an incentive system that ensures that lawsuits are filed whenever the rights of future generations are violated by current owners, and whenever there is sufficient information in the present to bring such a lawsuit. If present claimants are allowed to sue on behalf of future generations, they will have an incentive to collect information about potential harms to future generations and bring relevant claims in court to collect compensation. The possibility of such suits will, in turn, induce owners to refrain from overconsumption and overuse and induce them to consider the interests of future generations in their decisions.

When such suits succeed in court, injunctive relief will often be the most appropriate remedial tool to protect the interests of future generations. For example, following a waste claim, a court may use an injunction to order current owners to avoid storing chemicals in the ground. When injunctive relief is granted, some monetary award should also be given to the plaintiff to provide an incentive to bring claims to court. When damages are a more appropriate remedy, as opposed to injunctive relief, part of the monetary award should similarly go to the plaintiff as an incentive mechanism, while the lion's share should be awarded to charitable organizations devoted to sustainable development or to similar goals relevant to the issue of the suit.<sup>234</sup>

Lastly, allowing these kinds of temporal claims (in waste, trust, or abuse of rights) to go forward would effectively shift the discussion to the courts. It could be argued, indeed, that judges might struggle to distinguish between uses that are "wasteful" for future generations and those that are not, and that calculating future harms could be challenging.<sup>235</sup> Despite these challenges, we suggest that opening up a forum to discuss the harms to future generations through adjudication would be significant in itself. It would allow thoughtful deliberation to go

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<sup>233</sup> This is akin to the considerations currently employed to approve a representative claimant in class action litigation. See Harel & Stein, *supra* note 231.

<sup>234</sup> Such a remedial mechanism is akin to cy pres relief in class action litigation. See Martin H. Redish, Peter Julian & Samantha Zyontz, *Cy Pres Relief and the Pathologies of the Modern Class Action: A Normative and Empirical Analysis*, 62 FLA. L. REV. 617, 634 (2010) ("In its current form as used in the federal courts, cy pres relief in class actions has involved the donation of a portion of the settlement or award fund to charitable uses which are in some loose manner connected to the substance of the case."). The use of cy pres as a class action remedy was pioneered in a 1972 student comment. Stewart R. Shepherd, Comment, *Damage Distribution in Class Actions: The Cy Pres Remedy*, 39 U. CHI. L. REV. 448 (1972).

<sup>235</sup> See Yael R. Lifshitz, Maytal Gilboa & Yotam Kaplan, *Future Nuisance* (Feb. 2023) (unpublished manuscript) (on file with authors), for an exploration of these challenges in greater detail.

forward, which would be instrumental in bringing evidence regarding future harms to the fore. It would also have the benefit of calling on owners to consider the harms at stake in a concrete way, and in doing so, would begin the process of debiasing with regards to future generations.<sup>236</sup>

### C. *The Advantages of Property Law*

Above, we suggested possible changes to several property law doctrines that would encourage current owners to consider the interests of future generations. We do not claim that this goal should be achieved through property law alone. There is no reason that public law and government regulation should not be used for the same purpose, in addition to property law. We propose merely to use property law as yet another arena and mode of operation. There are several important reasons why we believe it is vital to use property law to align the interests of current owners with those of future generations, and not to leave this role solely to state regulatory action, such as zoning or environmental regulation. In other words, despite its structural limitations and current inability to protect the interests of future generations, property law has several important comparative institutional advantages that make it a potentially useful tool for this purpose.

A first comparative institutional advantage relates to regulatory capture.<sup>237</sup> Regulatory attempts could be made to induce current owners to consider the interests of future generations. Such efforts, even if partially successful, are vulnerable to regulatory capture.<sup>238</sup> Regulators do not operate in a vacuum or represent the interest of society as an abstract concept.<sup>239</sup> Rather, they are under political and electoral pressures, and represent a complex compromise between interest groups.<sup>240</sup> By

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<sup>236</sup> For further development of the discussion regarding the benefits of adjudication in this context, see *id.*

<sup>237</sup> See Posner, *supra* note 186, at 19 (“Agencies are subject to far more intense interest-group pressures than courts. The agency heads are political appointees and their work is closely monitored by congressional committees. The fact that agency members are specialized, and that they are less insulated from the political process than judges are, makes them targets for influence by special-interest groups; hence the term ‘regulatory capture.’ Historically, the missions of regulatory agencies have often been anticompetitive, as capture theory implies: interest groups seek to influence agencies to insulate the groups’ members from competition, as by blocking new entry. Execution of valid regulatory policies is often thwarted by the dependence of regulators on information supplied by the regulated entities and by the perverse incentives created by ‘revolving door’ behavior.”).

<sup>238</sup> See *id.*

<sup>239</sup> *Id.*

<sup>240</sup> *Id.*



definition, future generations are not a powerful interest group and therefore will never be fully protected by central regulators. By contrast, property law doctrines, as described above, do not operate through a central regulatory authority, and are therefore less susceptible to regulatory capture.<sup>241</sup> For example, in our proposed version of the waste law, a claim can be brought by any private citizen able to prove it without depending on regulatory initiative. In this sense, property law can function from the ground up as a decentralized system of legal actions brought by individual claimants, offering an important addition to standard regulatory tools.

Property also enjoys significant informational advantages. Centralized regulatory agencies operate based on top-down mechanisms, concentrating control and decision-making in the hands of certain legal actors. By contrast, as a private law doctrine, property law tends to be more bottom-up, exercised by private individuals. This structure allows for distributed action and the generation of information from the ground up.<sup>242</sup> If individual users and holders know of a cause of action as described above, they can bring it to court. Such individuals are often better informed about the details of the properties in question<sup>243</sup> than central regulators can ever hope to be.<sup>244</sup> Property law is designed to allow the authorities to use private owners as managers and regulators to ensure efficient use of property. It would be beneficial to use these mechanisms also to represent, when possible, the interests of future generations. If this important task is left entirely to centralized regulatory systems, the benefits of distributed action available under property law doctrines are lost.

Finally, property serves as an important platform for other types of regulatory mechanisms.<sup>245</sup> Because many of the governance functions of a sovereign state are territorially defined, and property rights, particularly to land, are defined with reference to a particular location within that territory, these rights help the state organize and facilitate its governance.<sup>246</sup> Consider, for example, the levying of taxes based on

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<sup>241</sup> *Cf. id.*

<sup>242</sup> See J. Maria Glover, *The Structural Role of Private Enforcement Mechanisms in Public Law*, 53 WM. & MARY L. REV. 1137, 1154 (2012) (“[P]ublic civil enforcers in some regulatory areas suffer informational disadvantages. Those disadvantages arise for a simple reason: the best sources of information about private wrongs are often the parties themselves, because they tend to have superior knowledge regarding the costs and benefits of given activities, the costs of reducing risks of harm, and the probability or severity of risk.” (footnotes omitted)).

<sup>243</sup> *Id.*

<sup>244</sup> *Id.*

<sup>245</sup> See Katz, *supra* note 161; Nestor M. Davidson, *Standardization and Pluralism in Property Law*, 61 VAND. L. REV. 1597, 1648 (2008).

<sup>246</sup> Katz, *supra* note 161, at 2031.

ownership or use of land, the obligation to remove snow on a particular stretch of sidewalk outside one's house, the obligation to repair the sidewalk, and so on.<sup>247</sup> The role that property plays in this regard and the benefits of a property system lie not only in its ability to facilitate the use of resources but also to serve as a springboard for other types of governance structures. But if property is not performing its function, in this case because of a temporal misalignment, it might also not do the job we need it to do as a useful regulatory platform. Therefore, correcting the temporal misalignment not only makes property function better, but also makes it better able to serve as a regulatory platform when we need it to do so.

#### CONCLUSION

In its current form, property law fails on its own terms. The promise of property is to induce current right holders to look far into the future and serve as loyal guardians, conserving existing resources for the benefit of all generations to come. This promise is an empty one, as the current state of our resources and the looming climate crisis clearly demonstrate.

We challenge property law to keep its promise. We propose to change the basic structure of property law, creating duties toward future generations to match the everlasting rights of property holders. Although this is a profound change in the form of property law, it is not foreign to it. The change we propose is consistent with the internal logic and stated aims of property law and is based on the tenets of age-old property law doctrine and theory. We believe that our proposal offers the starting point for a new wave of property law scholarship that will further develop the doctrinal tools and distinction necessary to allow this area of law to fulfill its promise and provide future generations the protections they deserve.

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<sup>247</sup> *Id.* at 2031–32.