

# An Injury to the Inheritance: Locating an Affirmative Obligation to Climate Adaptation in the Law of Waste

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*As global temperatures continue to rise, most climate policy conversations have focused on mitigation measures, aimed at reducing the proliferation of greenhouse gases and curbing the rise in temperatures. Discussions, especially in legal literature, about climate adaptation measures — those intended to, for example, prepare for rising sea levels or increasing incidence of extreme weather events — have generally focused on the powers and responsibilities of government actors. Private citizens too, however, may also have a duty to prepare for climate change.*

*The law of waste is a longstanding doctrine under which holders of a current possessory interest in real property, such as tenants or mortgagors, bear certain responsibilities towards holders of concurrent or future interests, such as lessors or mortgagees. This Note argues that a subset of the law of waste, called permissive waste, may be read to impose a duty to affirmatively pursue climate adaptation measures on tenants and other similarly-situated individuals. Part II provides background information on current efforts to find a legal basis for a duty to pursue climate adaptation. Part III examines the history of the law of waste, with particular attention to the concept of permissive waste. Parts IV and V outline how the law of waste could be applied to the problem of climate adaptation, exploring the necessary conditions for such a claim to be made as well as the uses and limitations of using the law of waste in this fashion.*

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## I. INTRODUCTION

In October 2018, the Intergovernmental Panel on Climate Change (IPCC), the preeminent international body on climate change research, issued a dire report: the world has twelve years to make drastic and wide-ranging changes in order to keep global warming below 1.5 degrees Celsius.<sup>1</sup> This grim assessment was quickly picked up and distorted: “IPCC Report Says We Have 12 Years To Stop Climate Change,” read one headline.<sup>2</sup> Such headlines accurately convey the intimidating time pressure we face, but elide the simple truth that the IPCC’s report is about limiting the extent of climate change, not stopping it. The IPCC’s report makes clear that even 1.5 degrees Celsius of warming will drastically reshape our planet, from increasing the incidence of extreme weather to killing up to ninety percent of coral reefs.<sup>3</sup> Combating climate change will require not only climate *mitigation* efforts aimed at curbing rising temperatures, but also climate *adaptation* to help society adjust to our warming world.<sup>4</sup>

Existing efforts to respond to climate change using the courts have generally focused on mitigation efforts. In *Massachusetts v. EPA*, the landmark federal case on climate change, the Supreme Court upheld the interpretation that the Clean Air Act gave the federal government the authority to regulate the greenhouse gases that cause climate change, which is to say that the Act gives the federal government the power to pursue policies to *mitigate*

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1. See Press Release, Intergovernmental Panel on Climate Change, Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C Approved by Governments (Oct. 8, 2018), <https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/> [https://perma.cc/LXJ2-Y47N] [hereinafter “Summary”] (“[L]imiting global warming to 1.5°C would require ‘rapid and far-reaching’ transitions in land, energy, industry, buildings, transport, and cities. Global net human-caused emissions of carbon dioxide (CO<sub>2</sub>) would need to fall by about 45 percent from 2010 levels by 2030. . .”). The IPCC is a United Nations panel convened to assess the scientific basis for climate change as well as its impacts, risks, and possible measures for adaptation and mitigation.

2. Tarpley Hitt, *IPCC Report Says We Have 12 Years to Stop Climate Change. Can Bioenergy With Carbon Capture Save Us?*, DAILY BEAST (Oct. 10, 2018), <https://www.thedailybeast.com/ipcc-report-says-we-have-12-years-to-stop-climate-change-can-bioenergy-with-carbon-capture-save-us> [https://perma.cc/4ZNJ-QBC9].

3. Summary, *supra* note 1.

4. The IPCC defines mitigation as “human intervention to reduce emissions or enhance the sinks of greenhouse gases,” while adaptation is “the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities.” INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, GLOBAL WARMING OF 1.5°C 542, 554 (V. Masson-Delmotte et al. eds., 2018).

climate change.<sup>5</sup> No similarly unified authority, however, grants the federal government authority to pursue policies to *adapt* to climate change. Moreover, there have been few efforts to pursue climate adaptation in the courts; an online climate change litigation tracker notes just twelve cases in the United States which seek to implement climate adaptation measures.<sup>6</sup> Part of the difficulty in trying to implement climate adaptation through impact litigation is in locating a cognizable legal duty to pursue climate adaptation. So far, these efforts have generally tried to locate such a duty in human rights obligations or tort claims, and have focused on the responsibility of government actors.<sup>7</sup> Rather than trying to hold the government responsible by these means, however, it might be possible to find a duty of climate adaptation in some long-held principles of property law.

This Note argues that holders of concurrent and future interests in land — remainderpersons, reversioners, lessors, and mortgagees, among others<sup>8</sup> — are capable of suing for failure to pursue climate resilience and adaptation strategies on a theory of permissive waste, extending the existing and well-established duty of tenants to keep property in good condition to prepare for the reasonably foreseeable consequences of climate change. This hypothetical extension, though narrower in focus and applicability than other novel theories for climate change liability, lays the groundwork to begin thinking of climate change adaptation as not just a responsibility of states and governments but of individual actors. Part II examines the efforts by policymakers and scholars to outline an affirmative obligation to climate change action, as well as the difficulties litigants have faced in putting these theories into action. Part III outlines the history of waste

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5. See *Massachusetts v. EPA*, 549 U.S. 497 (2007). Because its emphasis is on federal power to mitigate climate change, *Massachusetts v. EPA* is not discussed heavily in this Note. For discussion of the *Massachusetts v. EPA* ruling, see Jonathan Martel et al., *Clean Air Regulation*, in *GLOBAL CLIMATE CHANGE AND U.S. LAW* 117–52 (Michael B. Gerrard & Jody Freeman eds., 2d ed. 2014).

6. The Climate Change Litigation Databases, created as a collaboration of Columbia Law School’s Sabin Center for Climate Change and Arnold & Porter LLP, records twelve cases under “[a]ctions seeking adaptation measures” at time of writing. By comparison, the category for “[a]ctions seeking money damages for losses” contains twenty cases, while there have been 183 climate change-related cases brought under the Clean Air Act alone. *U.S. Climate Change Litigation*, CLIMATE CHANGE LITIGATION DATABASES, <http://climatecasechart.com/us-climate-change-litigation/> [https://perma.cc/T56K-J4KE] (last visited Jan. 4, 2019).

7. See *infra* Part II.

8. See *infra* note 37, for a discussion of these terms.

doctrine and examines the strand of scholarship that uses waste doctrine as a case study through which to understand jurisprudential shifts in American property law before moving on to the current status of waste law in the United States, with special attention paid to the modern tenant's obligations under permissive waste. Part IV surveys previous efforts to use waste law to illuminate climate change, and proposes that modern tenants can be held liable for failure to pursue climate adaptation and resilience strategies by means of a permissive waste claim.<sup>9</sup> Part V considers the strengths and weaknesses of such an approach in practice as well as in the broader context of theoretical and novel legal claims, and concludes by looking to the future of climate litigation.

## II. THE SEARCH FOR A LEGAL DUTY TO PURSUE CLIMATE ADAPTATION

This Part addresses various efforts to establish or locate a legal duty to affirmatively pursue climate adaptation measures. It first discusses attempts by international and U.S. policymakers to establish such a duty. Finding such approaches generally unsuccessful, this Part then summarizes alternative scholarly approaches to establishing such a duty, concluding that while attempts to locate such a duty in existing law show promise, no such duty has yet been widely recognized.

The intensifying damage of climate change has encouraged activist and interest group efforts to create a legal mechanism capable of forcing (usually local or national) governments to pursue climate adaptation or mitigation measures.<sup>10</sup> Attempts to mandate such a duty through legislation or in international agreements have been largely unsuccessful. The United Nations Office of the High Commissioner for Human Rights argued for the inclusion of a rights-based approach to mandating climate adapta-

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9. For more on the types of claims which exist under waste doctrine, including permissive waste claims, see *infra* Part III.A.

10. See, e.g., *Massachusetts v. EPA*, 549 U.S. 497 (holding that the Clean Air Act, properly read, conferred on the EPA the authority to regulate greenhouse gases as a form of air pollution and that states could sue the EPA over failure to exercise this authority); Michael C. Blumm & Mary Christina Wood, "No Ordinary Lawsuit": *Climate Change, Due Process, and the Public Trust Doctrine*, 67 AM. U. L. REV. 1 (2017) (offering a comprehensive discussion of an impact litigation case seeking to impose responsibility for climate change on the federal government on a public trust doctrine basis). See also *infra* Part IV.A for more discussion of the public trust doctrine.

tion in what would become the Paris Agreement, the latest international commitment to respond to climate change organized under the United Nations Framework Convention on Climate Change (UNFCCC), but this language was reduced to a single, vague, preambular paragraph in the final text of the agreement.<sup>11</sup> While adaptation is an increasingly-discussed goal of agreements under the UNFCCC, such discussion is imprecise and has not led to legally binding obligations or mechanisms.<sup>12</sup>

While U.S. federal legislative efforts to proactively mitigate and adapt to the projected effects of climate change have been stymied by legislative gridlock, the Obama administration used its executive authority to mandate climate preparedness efforts where possible.<sup>13</sup> President Barack Obama signed Executive Order 13,514 in 2009, mandating federal agency participation in

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11. See UNITED NATIONS OFFICE OF THE HIGH COMM'R FOR HUMAN RIGHTS, UNDERSTANDING HUMAN RIGHTS AND CLIMATE CHANGE 2 (2015) (“States must ensure that appropriate adaptation measures are taken to protect and fulfil the rights of all persons, particularly those most endangered by the negative impacts of climate change. . . .”). For the final text of the Paris Agreement, see Framework Convention on Climate Change, *Adoption of the Paris Agreement*, recital 11, U.N. Doc. FCCC/CP/2015/L.9/Rev.1 (Dec. 12, 2015), <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf> [<https://perma.cc/A4D9-Z36V>] (“Acknowledging that climate change is a common concern of humankind, Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights. . . .”) (emphasis in original). Note, among other changes, the reduction from “[s]tates must ensure” to “[p]arties should.” The final paragraph also flattens the original specific reference to those “most endangered by the negative impacts of climate change” to a general reference to “people in vulnerable situations.” The UNFCCC is an international treaty that, among other terms, sets nonbinding limits on greenhouse gas emissions; it is updated annually with additional agreements and modifications. United Nations Framework Convention on Climate Change, art. 4 para. 1(b), May 9, 1992, S. Treaty Doc No. 102-38, 1771 U.N.T.S. 107. The UNFCCC and the Kyoto Protocol to that same document also contain language encouraging adaptation to climate change, but neither agreement mandates it, creates a duty for sovereign states to pursue it, or enshrines a right of vulnerable peoples to appropriate climate change adaptation measures. See *id.*; Kyoto Protocol to the United Nations Framework Convention on Climate Change, art. 10, Dec. 10, 1997, U.N. Doc FCCC/CP/1997/7/Add.1, 37 I.L.M. 22 (1998).

12. See Nina Hall & Åsa Persson, *Global Climate Adaptation Governance: Why Is It Not Legally Binding?*, EUR. J. INT'L. RELATIONS (2017), <https://doi.org/10.1177/1354066117725157> [<https://perma.cc/5R5V-NKEN>].

13. For a discussion of the difficulties of enacting meaningful climate legislation, see Barry G. Rabe, *Can Congress Govern the Climate?*, in GREENHOUSE GOVERNANCE: ADDRESSING CLIMATE CHANGE IN AMERICA 260 (Barry Rabe ed., 2010). Rabe suggests that even beyond the current political inability to reach consensus on the existence of anthropogenic climate change or the responsibility of government to address climate change, Congress suffers from structural incapacities which render effective and comprehensive climate legislation difficult to achieve. For a general overview of the Obama administration's attempts to combat climate change by non-legislative means, see Robert V. Percival, *Presidential Power to Address Climate Change in an Era of Legislative Gridlock*, 32 VA. ENVTL. L.J. 134 (2014).

climate adaptation efforts.<sup>14</sup> This was later revoked and supplanted by President Obama's issuance of Executive Order 13,693 in 2015, which required that agencies take into account the potential effects of climate change in several activities.<sup>15</sup> In contrast to mitigation efforts like the Clean Power Plan issued by the Environmental Protection Agency (EPA) during the Obama administration or the decision to sign onto the Paris Agreement, these executive orders were focused on adapting to existing and oncoming climate change. Executive Order 13,693 was later revoked by President Donald Trump in 2018,<sup>16</sup> but even when the order was in effect its obligations were vague at best, and by its own terms, did not apply to state and local entities.<sup>17</sup> The Trump administration has since issued Executive Order 13,834, which mandates federal agency compliance with statutory energy efficiency and environmental obligations but makes no mention of climate adaptation or preparedness and does not require agencies to take climate change into account in their planning activities.<sup>18</sup>

Some states have taken their own steps to supplement these international and national efforts to prepare for or adapt to climate change. For example, twenty-two states and the District of Columbia have mandated the creation of climate change adaptation plans.<sup>19</sup> Of these states, sixteen states and D.C. have finalized their plans, while six other states were still in the process of developing their plans.<sup>20</sup> These state-level mandates to pursue climate change adaptation measures vary significantly in their

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14. Exec. Order No. 13,514, 74 Fed. Reg. 52,117 (Oct. 5, 2009).

15. Exec. Order No. 13,693, 80 Fed. Reg. 15,869 (Mar. 19, 2015).

16. Exec. Order No. 13,834, 83 Fed. Reg. 23,771 (May 17, 2018); *see also Regulation Database — Executive Orders*, SABIN CTR. FOR CLIMATE CHANGE L. (last updated May 17, 2018), <http://columbiaclimatelaw.com/resources/climate-deregulation-tracker/database/executive-orders/> [https://perma.cc/33CF-FHF8].

17. *See* Exec. Order No. 13,693, 80 Fed. Reg. 15,869 (Mar. 19, 2015). Rather than adaptation, the Executive Order refers to “resilience,” defined as “the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions.” Federal agencies are directed to “consider” resilience in building design; “identify and address” resilience concerns in coordination with state, local, and tribal governments on a regional level; and “initiate the inclusion of . . . climate preparedness and resilience” into federal leadership and educational programs.

18. *See* Exec. Order No. 13,834, 83 Fed. Reg. 23,771 (May 17, 2018).

19. *See* Aaron D. Ray & Jessica Grannis, *From Planning to Action: Implementation of State Climate Change Adaptation Plans*, 3 MICH. J. SUSTAINABILITY 5 (2015).

20. *State and Local Adaptation Plans*, GEO. CLIMATE CTR., <https://www.georgetownclimate.org/adaptation/plans.html> [https://perma.cc/ZM6Y-QM2L] (last visited Dec. 30, 2018).

stringency and enforceability.<sup>21</sup> In general, there is no widely-recognized duty of federal, state, or local governments to pursue climate change adaptation measures in U.S. law.

Some scholars have suggested that a basis for liability for failure to adapt to climate change could be located in the common law, but sovereign immunity and the displacement of common law claims by statute have been significant barriers for such claims in. Generally, these efforts have emphasized common law torts like negligence on the theory that a government actor that fails to adapt to climate change is behaving negligently, thereby causing a cognizable injury to plaintiffs.<sup>22</sup> For example, in *In re Katrina Canal Breaches Litig.*, a series of cases brought in the wake of Hurricane Katrina, plaintiffs alleged that federal government projects to expand a shipping channel had negligently increased the possibility of damage from flooding.<sup>23</sup> One scholar suggests fraud may provide another basis for litigation on the grounds that government efforts to misrepresent or obscure the impacts of climate change may forestall successful efforts to adapt to climate change or mitigate its effects, but no such suit has yet been brought.<sup>24</sup> Thus far, these approaches have failed to bear fruit.<sup>25</sup> Federal, state, and local governments faced with environmental litigation are all capable of drawing on sovereign

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21. See, e.g., Alaska Administrative Order 238 (Sept. 14, 2007) (mandating only that the newly-formed Climate Change Sub-cabinet “identif[y] . . . federal and state mechanisms for financing climate change activities in Alaska, including adaptation and projects”); Climate Protection and Green Economy Act, Mass. Gen. Laws ch. 21N (2008). The Supreme Judicial Court of Massachusetts has interpreted the Massachusetts law to be legally binding at least in its emissions reduction targets, though the court did not touch the issue of climate change adaptation. See *Kain v. Dep’t of Env’tl. Prot.*, 49 N.E.3d 1124 (Mass. 2016).

22. See UNITED NATIONS ENV’T PROGRAMME, THE STATUS OF CLIMATE CHANGE LITIGATION 34 (2017).

23. *In re Katrina Canal Breaches Litig.*, 696 F.3d 436 (5th Cir. 2012), cert. denied *sub nom.* *Lattimore v. United States*, 133 S. Ct. 2855 (2013). Though discussed with some frequency in a climate change context, climate change “featured in the background rather than the text” of *In re Katrina Canal Breaches*. UNITED NATIONS ENV’T PROGRAMME, *supra* note 22, at 22. Nevertheless, the theory advanced by plaintiffs would have made it possible to hold the government liable for negligence where the government’s actions had increased the injury caused by flooding, which would have had powerful applications in the context of adaptation to climate change. For a similar case at the municipal level, see *Emerick v. Town of Glastonbury*, 2015 WL 3684303 (Super. Ct. Conn. 2015) (allowing a plaintiff’s nuisance claim against a local municipality alleging property damage due to poor stormwater management to move forward).

24. See JENNIFER KLEIN, POTENTIAL LIABILITY OF GOVERNMENTS FOR FAILURE TO ADAPT TO CLIMATE CHANGE 15 (2015).

25. See *id.*, at 2.

immunity defenses to bar such suits.<sup>26</sup> The federal government opened itself up to common law tort claims via the Federal Tort Claims Act (FTCA), but exceptions to that liability within the Act offer, in the words of one scholar, “virtually bulletproof insulation to the Federal Government for tort claims associated with historic environmental harms.”<sup>27</sup> *In re Katrina Canal Breaches*, for example, was brought under the FTCA and dismissed when the Fifth Circuit found the conduct at issue fell within the discretionary function exception, which provides the federal government immunity from suit for any claim based on conduct which involves an element of judgment or choice and is based on public policy considerations.<sup>28</sup> Other negligence claims which have been brought, primarily for flooding, have been subsequently withdrawn.<sup>29</sup>

A more fruitful approach may lie in a novel theory basing the government’s obligation to adapt in a takings claim.<sup>30</sup> Professor Christopher Serkin has argued that a possible cause of action lies in holding governments liable for their failure to adapt to climate

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26. See *id.* at 3–6, 18. Sovereign immunity, which prevents the government from being sued without its consent, generally protects governments from climate change suits unless the immunity is somehow waived with respect to the action brought. See also CARY R. PERLMAN, ENVIRONMENTAL LITIGATION: LAW AND STRATEGY 375–77 (2009) (discussing how Eleventh Amendment state sovereign immunity impacts citizen environmental litigation against state governments); Kenneth M. Murchison, *Waivers of Immunity in Federal Environmental Statutes of the Twenty-First Century: Correcting a Confusing Mess*, 32 WM. & MARY ENVTL. L. & POL’Y REV. 359 (2008) (discussing the various waivers of immunity contained in federal environmental statutes); Fred Smith, *Local Sovereign Immunity*, 116 COLUM. L. REV. 409 (2016) (discussing the general difficulty of holding municipal governments liable, though with an emphasis on Constitutional torts and not environmental ones).

27. Patrick E. Tolan Jr., *Environmental Liability Under Public Law 85-804: Keeping the Ordinary out of Extraordinary Contractual Relief*, 32 PUB. CONT. L.J. 215, 240 (Winter 2003).

28. *In re Katrina Canal Breaches Litig.*, 696 F.3d at 448–49. Because policy judgments nearly always underlie environmental protection actions, including climate mitigation, overcoming the discretionary function exception is very difficult in environmental litigation. Tolan, *supra* note 27, at 242. Additionally, the FTCA contains an exception for independent contractors, which serves as an additional bar to much potential common law environmental litigation. *Id.* at 241.

29. See Klein, *supra* note 24, at 3.

30. The “Takings Clause” of the Fifth Amendment states that “private property [shall not] be taken for public use, without just compensation.” U.S. CONST. amend. V. “Takings claims” arise when government action interferes with private interests in property; actions that trigger such a claim can range from outright physical interference to regulatory or possibly judicial action. 1 WILLIAM J. RICH, MODERN CONSTITUTIONAL LAW § 17:1-5, at 8–9 (2018).

change on what he calls a “passive takings” theory, which asserts that:

[T]akings should arise when property is subject to such regulatory control that the government is understood to be responsible for the resulting harm, whether it acts or not. Or, to put it in affirmative terms, the government should have a constitutional duty to act when it is complicit in creating the conditions that are responsible for harm to property.<sup>31</sup>

Serkin illustrates his theory using the example of sea-level rise. He suggests that a possible claim may exist where, for example, restrictions on the height of beachfront property may prevent homeowners from placing their homes on stilts, which can worsen the damage and loss of use of property caused by storm surges by prohibiting property owners from pursuing climate adaptation measures.<sup>32</sup> Such claims, because they are rooted in takings liability and not nuisance or negligence, may not be subject to sovereign immunity defenses.<sup>33</sup> Supreme Court jurisprudence suggests that even temporary flooding caused by government action may present a basis for takings liability.<sup>34</sup> Though

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31. Christopher Serkin, *Passive Takings: The State's Affirmative Duty to Protect Property*, 113 MICH. L. REV. 345 (2014).

32. See *id.* at 391. Serkin also suggests that coastal armoring may prove a fruitful basis for “passive takings” litigation. *Id.* at 394. See also KLEIN, *supra* note 24, at 23.

33. See *Jachetta v. United States*, 653 F.3d 898, 909 (9th Cir. 2011) (holding that the “self-executing” nature of the Takings Clause generally prevents sovereign immunity from barring recovery by plaintiffs in state court); see also KLEIN, *supra* note 24, at 23. *But see* Eric Berger, *The Collision of the Takings and State Sovereign Immunity Doctrines*, 63 WASH. & LEE L. REV. 493 (2006). Berger’s article, which predates the *Jachetta* decision, but follows several other Circuit Court decisions on the subject, argues persuasively that the question of whether Eleventh Amendment sovereign immunity defenses can bar Takings Claims remains a live and unresolved question. Berger at 495 n.4. For the other Circuit Court decisions Berger refers to, see, for example, *Harbert Int’l Inc. v. James*, 157 F.3d 1271 (11th Cir. 2000) (holding that sovereign immunity prevents takings claims in federal courts); *John G. & Marie Stella Kenedy Mem’l Found. v. Mauro*, 21 F.3d 667 (5th Cir. 1994) (holding same); *Broughton Lumber Co. v. Columbia River Gorge Comm’n*, 975 F.2d 616 (9th Cir. 1992) (holding same).

34. See *Arkansas Game & Fish Comm’n v. United States*, 568 U.S. 23, 38 (2012) (“We rule today, simply and only, that government-induced flooding temporary in duration gains no automatic exemption from Takings Clause inspection.”). Though the Supreme Court has upheld both permanent and seasonally-induced flooding as bases for takings claims, temporary flooding (which would include irregular flooding occurring as a result of severe weather) has yet to be directly considered by the Court, though it has opened the way to such litigation. See *Arkansas Game & Fish Comm’n*, 568 U.S. at 34 (holding that because permanent flooding can constitute a taking, temporary flooding may also be compensable); *United States v. Cress*, 243 U.S. 316, 328 (1917) (holding that seasonal flooding

theoretically promising, the idea that inaction can constitute a taking has failed in the only circuit where it has been tested. *St. Bernard Parish Gov't v. United States* ran parallel to *In re Katrina Canal Breaches Litig.* and covered similar injuries, but was premised on the idea that government inaction to prevent flooding constituted a taking; though the case succeeded in Federal Claims Court, it was overturned by the Federal Circuit.<sup>35</sup> Moreover, since a takings claim is based in the Constitution, it would only be available when there is state action. Practically speaking, this state action requirement means that this takings claims would be available only against government entities and not against corporate or other actors.

Despite efforts by policymakers and scholars to create a duty to affirmatively pursue climate adaptation or to locate such a duty in existing common law or U.S. constitutional law, no court yet acknowledges this duty. There is, at the time of writing, no clearly recognized duty to pursue climate change adaptation measures in the United States, and no clear way that such a duty can be imposed through existing statutes or the common law.

### III. THE DOCTRINE OF WASTE

Waste is a common law action under which remainderpersons may bring a claim against a tenant for “the destruction, alteration, misuse, or neglect of property,” where such actions by the tenant have negatively impacted the remainderperson’s interest in the property.<sup>36</sup> As waste is a centuries old rule in the common law, courts’ understanding of “destruction, alteration, misuse, or neglect” as well as what constitutes a negative impact on the remainderperson’s interest, has changed over time. This Part first outlines a brief history of waste. Next, it assesses the existing scholarship on waste, which has generally treated the doctrine as a useful lens through which to understand shifts in U.S. jurisprudence while also viewing the law itself as now largely irrele-

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caused by government action can constitute a taking); *Pumpelly v. Green Bay Co.*, 13 Wall. 166 (1872) (holding that permanent government-induced flooding could constitute a taking); see also KLEIN, *supra* note 24, at 23, 25 (discussing takings claims as a basis for government liability generally).

35. See *St. Bernard Gov't Parish v. United States*, 887 F.3d 1354 (Fed. Cir. 2018), *cert. denied*, 2019 WL 113112 (U.S. 2019).

36. 8 POWELL ON REAL PROPERTY § 56.01 (Michael Allan Wolf ed., 2019) [hereinafter POWELL].

vant. Finally, this Part addresses the current state of U.S. law on waste, finding the claim remains valid even though it is only rarely invoked.

### A. HISTORY

One of the oldest common law claims, “waste” recognizes liability for destructive acts or omissions made to property by one lawfully in possession of that property, which are detrimental to the interests of another (or others) who hold an interest in the property but are not in possession of it.<sup>37</sup> Waste was traditionally defined as everything “which does a permanent injury to the inheritance,” which prior to the nineteenth century included nearly any change to the character of a property.<sup>38</sup> At that time, U.S. jurisprudence began to focus on the value of land rather than its character, narrowing the meaning of “injury” from any alteration of the property to only those alterations which reduced the market value of the property.<sup>39</sup> The law of waste serves to balance the conflicting interests of current owners and concurrent or future owners against each other, and thus tends to change as the preferred balance of those interests changes.<sup>40</sup> Though not often a subject of practical concern in modern practice,<sup>41</sup> the law of waste remains important because of the public policy calculations inherent to it and the broad range of law it impacts (torts, contracts, and property, at the very least) can offer revealing insights

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37. 8 THOMPSON ON REAL PROPERTY, THOMAS EDITIONS § 70.03 (David A. Thomas ed., 2018) [hereinafter THOMPSON]. Several types of legal relationships, with different names for the actor in legal possession and the actor who holds an interest but is not in possession, can give rise to actions for waste. Actors in interest but not in possession can include remainderpersons, who are entitled to inherit property once someone else’s interest terminates; mortgagees, who can be treated as having an interest in the mortgaged property; and lessors, who have an interest in a property which has been leased to and is in possession of some lessee. This Note uses “tenant” and “remainderperson” to refer generically to the actor in legal possession and the actor holding an interest but not in legal possession, respectively.

38. See, e.g., 1 EDWARD COKE, A COMMENTARY UPON LITTLETON 54A (18th ed. 1823) (“If a tenant cuts down or destroys any fruit trees growing in his garden or orchard it is waste. If he builds a new house, it is waste, and if he suffers it to be wasted, it is a new waste.”).

39. See *infra* Part III.B.

40. See POWELL, *supra* note 36, at § 56.01.

41. See Thomas W. Merrill, *Melms v. Pabst Brewing Co. and the Doctrine of Waste in American Law*, 94 MARQ. L. REV. 1055, 1084 n.140 (2011); see also Richard A. Posner, *Comment on Merrill on the Law of Waste*, 94 MARQ. L. REV. 1095, 1099 n.9 (2011). For an alternate view, John Lovett argues for the continued practical importance of waste. See John A. Lovett, *Doctrines of Waste in a Landscape of Waste*, 72 MO. L. REV. 1209 (2007).

into how we think about the law and what ends we intend to achieve through it.

Modern claims for waste fall into two categories: affirmative (or voluntary) waste and

permissive waste. Affirmative waste is waste that occurs by the action of the tenant. Examples of affirmative waste include clearing trees or damaging buildings; even the commission of improvements on the property can be considered affirmative waste.<sup>42</sup> Permissive waste, on the other hand, deals with inaction, such as allowing a property to fall into a state of disrepair.<sup>43</sup> In determining what qualifies as waste, courts generally look to explicit changes in the value of the inheritance or employ a reasonability test: whether the practices of the tenant are consistent with generally-accepted practices for farming and property management, which courts generally call “good husbandry.”<sup>44</sup> Current jurisprudence around permissive waste, as well as what omissions are generally considered to qualify as permissive waste, are discussed below.

## B. ACADEMIC BACKGROUND

Waste appeared as a writ of the common law as early as the twelfth century and was developed further by statute in the thirteenth century.<sup>45</sup> The principles underlying the doctrine of waste are codified in the Magna Carta of 1225, which contains a provision prohibiting wasteful or destructive actions by guardians in chivalry later statutes passed in the thirteenth century, extended the scope of waste doctrine to all manner of tenants, including tenants holding life estates and tenants for years.<sup>46</sup> These laws

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42. See POWELL, *supra* note 36, at § 56.05[1]. Early English law was very strict on the subject of affirmative waste, holding that even changes which increased the value of the property, like turning forest into farmable land, could be considered waste because they altered the property. American jurisprudence subsequently developed the doctrine of “ameliorative waste,” which treated actions which increased the value of the property as inherently not wasteful. POWELL, *supra* note 36, at § 56.05[1][c]. See *infra* Part III.B, for further discussion of ameliorative waste.

43. See POWELL, *supra* note 36, at § 56.05[2]. See, e.g., *Zauner v. Brewer*, 596 A.2d 388, 394 (Conn. 1991) (holding that allowing a dock and boathouse to begin to crack and split by failing to make “preventive ordinary repairs” could constitute grounds for a permissive waste claim).

44. THOMPSON, *supra* note 37, at § 70.08(a)(2).

45. See POWELL, *supra* note 36, at § 56.02.

46. See THOMPSON, *supra* note 37, at § 70.07(d)(3), (4). Whether tenants holding life estates could be held liable for waste under the common law remains an open historical

created punitive remedies for waste, calling for forfeiture of lands and treble damages.<sup>47</sup> Early understandings of waste subjected the tenant to numerous restrictions: tenants were enabled only to take such timber as was necessary for day-to-day living, could not change the patterns of land use (e.g., could not turn farmland into a forest, or open new mines on the land), and were generally responsible for maintaining the land as it was in the condition they found it with the expectation that it would pass to the remainderpersons in nearly the same state as it had passed to them.<sup>48</sup> Perhaps the most commonly cited characteristic of this early waste doctrine was its strict attitude toward changes in the property. Early waste doctrine held that damages could sometimes result from a type of waste called “ameliorative waste,” under which changes such as altered land use or new construction could be considered waste even when they increased the property’s value because they had altered the property’s nature.<sup>49</sup> Though this strict approach to waste is no longer favored in either English or U.S. law, it provides an interesting window into an alternative system of land use, in which the goal is not to maximize value or extract all possible resources but to make land and its uses stable and persistent, at least while future interests in the land existed.

The Industrial Revolution brought significant changes to the waste doctrine. In contrast to their English counterparts, U.S. courts began to take a more tenant-oriented approach toward the subject of waste. The decision in *Melms v. Pabst Brewing Co.*, a Wisconsin Supreme Court case, neatly illustrates the U.S. change in the law of waste to favor value over character.<sup>50</sup> In *Melms*, a tenant took possession of a mansion, the value of which as residential property was quickly reduced by the growing presence of industry nearby, such as a railway and new factories.<sup>51</sup> Rather than allow the property to lose value, the tenant chose instead to raze the home and grade the land flat, so that the property could

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question, but tenants for years were not subject to waste claims until made so by statute. See THOMPSON, *supra* note 37, at § 70.07(c).

47. See THOMPSON, *supra* note 37, at § 70.07(d)(6).

48. See Jedediah Purdy, *The American Transformation of Waste Doctrine: A Pluralist Interpretation*, 91 CORNELL L. REV. 653, 663–65 (2006).

49. See THOMPSON, *supra* note 37, at § 70.07(j)(2); Purdy, *supra* note 48, at 664; Jill M. Fraley, *A New History of Waste Law*, 100 MARQ. L. REV. 861, 869 (2017).

50. *Melms v. Pabst Brewing Co.*, 79 N.W. 738 (Wis. 1899). For a comprehensive treatment of the *Melms* case which informs the following analysis, see Merrill, *supra* note 41.

51. See *Melms*, 79 N.W. at 740.

“serve business purposes.”<sup>52</sup> Under the strict English law, this ought to have constituted waste; even though the home was, in the word of the court, “absolutely undesirable as a residence,” tearing it down was an alteration to the character of the land to be inherited by the remainderperson.<sup>53</sup> Faced with the prospect of leaving the land in the same character as it was conveyed but rendered completely valueless, the tenant chose instead to severely alter the character of the parcel in order to maintain its value. The court held that the tenant acted rightly, and suggested it could not be “reasonably or logically” argued that the tenant was obliged to maintain the land in its original character irrespective of local economic changes.<sup>54</sup> In doing so, the court prized value over character when making decisions with respect to waste, a reprioritization that would become common throughout the United States. This approach effectively ended ameliorative waste as a cause of action because ameliorative waste prioritizes a change in a property’s character irrespective of value.

This transformation in U.S. law to a broader, more lenient understanding of waste has been the focus of much scholarly debate.<sup>55</sup> Thanks to the age of the law of waste and the extensive attention paid to it by historical commentators, some modern scholars have used waste as a case study to frame various theories of the transformation of U.S. jurisprudence. Horwitz originated this trend with his argument that the movement towards a more permissive understanding of waste, embodied by the shift to centering waste analysis on the financial value of real property rather than the property’s character, reflected a broader judicial policy in the United States of privileging economic development, as evidenced by the decision to depart from considering waste in terms of the character of the land to instead focus solely on the value of property.<sup>56</sup> Following Horwitz’s analysis, waste and its key cases has become a popular subject for scholars to focus on in articulating frameworks for analyzing U.S. jurisprudence.<sup>57</sup> As

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52. *Id.* at 9.

53. *Id.* at 13–14.

54. *Id.*

55. See MORTON J. HORWITZ, *THE TRANSFORMATION OF AMERICAN LAW, 1780–1860* (1977).

56. *Id.* at 54–60.

57. John Sprankling, for instance, used waste to demonstrate what he called an inherent “antiwilderness bias” in U.S. jurisprudence, the idea that “[a]ll other things being equal, the property law system tends to resolve disputes by preferring wilderness destruction to wilderness preservation.” John G. Sprankling, *The Antiwilderness Bias in Ameri-*

one scholar has put it: “[W]aste doctrine becomes particularly important in moments of radical change when patterns of land use are under intense pressure because the physical, environmental, social and economic circumstances affecting the underlying property relationship are changing dramatically.”<sup>58</sup> Though none of these analyses are particularly concerned with the current state of waste (being more interested in its evolutions or transformations at key points in the past), they suggest that the law of waste is an ideal subject when considering how societal changes have forced us to reconsider our obligations to the land and to one another, as in the case of climate change. Climate change, whether it progresses unimpeded or is answered with widespread reform, will almost certainly lead to radical environmental and societal change in the latter half of the twenty-first century. Waste law, which has existed in one form or another for almost a millennium, provides an interesting case study as to whether existing law can offer useful insights to the climate crisis and its attendant changes.

### C. STATE OF THE MODERN LAW

Actions for waste are only rarely brought in the modern day; one account cites a figure of only 255 waste cases from 2001 to 2011, and another found only twenty-eight appellate decisions on waste “worth citing” from 1980 to 2000.<sup>59</sup> Plaintiffs today often have little reason to resort to a waste claim. Historical waste rule was a default rule to fill gaps in contracts,<sup>60</sup> but modern leases generally contain explicit provisions governing alterations, improvements, and the duty to repair; thus, contract law sup-

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*can Property Law*, 63 U. CHI. L. REV. 519, 520 (1996). Jed Purdy, drawing on Sprankling, Horwitz, and Posner, uses waste as a lens through which to examine the strengths and weaknesses of explaining jurisprudence through economic or pluralist frameworks. See Purdy, *supra* note 48, at 653. Thomas Merrill, responding in part to Posner, used waste and particularly the *Melms* case to dispute the existence of a conflict between property as an individual right and property as an institutional mechanism for maximizing social value. See Merrill, *supra* note 41, at 1094; see also Posner, *supra* note 41, at 1095. More recently, Jill Fraley has responded to many of the above analyses by arguing that the alleged “transformation” identified in waste is best understood as consistent doctrinal evolution, and not a revolution. Fraley, *supra* note 49, at 861.

58. Lovett, *supra* note 41, at 1212.

59. Posner, *supra* note 41, at 1099 n.9; Merrill, *supra* note 41, at 1084–85 n.140.

60. See Purdy, *supra* note 48, at 665.

planted the doctrine of waste.<sup>61</sup> In other cases where waste would have historically been of importance, such as in the case of life estates, it has been overshadowed by the increasing popularity of trusts.<sup>62</sup>

Despite its lack of use as a cause of action, U.S. courts have continued to uphold a right of action for permissive waste.<sup>63</sup> And whether codified in statute or still a matter of the common law, U.S. jurisdictions generally recognize permissive waste as a basis for relief.<sup>64</sup> Yet when waste cases do crop up in the present day, courts are often quick to note the seemingly anachronistic nature of the claims.<sup>65</sup> While it may no longer be widely known, the law of waste has continued to evolve over time. Waste claims are no longer confined solely to holders of future interests. Holders of concurrent interests who are not in possession of a property, such as vendors or lessors of property, as well as mortgagees, are generally held capable of bringing cognizable waste claims against those in legal possession.<sup>66</sup>

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61. See Merrill, *supra* note 41, at 1084–85. The rise of contract law in place of waste raises the possibility that the hypothetical liability identified by this Note could also be added to a contract, for example in the form of a provision requiring a tenant to pursue necessary and reasonable climate adaptation measures. The use of private contracts to enforce a duty to pursue climate adaptation has not been the subject of much scholarly writing yet. *But see* DEANNA MORAN & ELENA MIHALY, CLIMATE ADAPTATION AND LIABILITY: A LEGAL PRIMER AND WORKSHOP SUMMARY REPORT (2018) (discussing the possibility of contract law as a basis for climate adaptation liability).

62. Posner, *supra* note 41, at 1096. Though trust law and waste law often rely on similar principles, the fiduciary duty of a trustee and the duties imposed on a tenant by waste doctrine are distinct. Posner notes that by placing a piece of land in trust to be administered by a trustee or board of trustees, the balancing of interests performed by waste law can instead be handled by a properly-incentivized trustee.

63. See THOMPSON, *supra* note 37, at § 70.06(b). For a definition of permissive waste, see *supra* Part III.A.

64. See POWELL, *supra* note 36, at § 56.05[2]. Since 2010, state and federal courts in Massachusetts, New York, North Carolina, Ohio, Rhode Island, Tennessee, Virginia, and West Virginia have recognized statutory or common law claims for permissive waste. See, e.g., *Matteson v. Walsh*, 947 N.E.2d 44 (Mass. App. Ct. 2011); *Gottesman v. Graham Apartments, Inc.*, 47 Misc. 3d 1213(A) (N.Y. Civ. Ct. 2015); *In re Jarrett*, 2014 Bankr. LEXIS 1504 (Bankr. M.D.N.C. 2014); *Palmer v. Mossbarger*, 27 N.E.3d 944 (Ohio Ct. App. 2015); *High Rock Westminster St. LLC v. Bank of Am., N.A.*, 2016 U.S. Dist. LEXIS 120629 (D.R.I. 2016); *1963 Jackson, Inc. v. De Vos*, 436 S.W.3d 278 (Tenn. App. 2013); *Bell v. Bell*, 89 Va. Cir. 472 (2013); *Stolipher v. Estate of Charles A. Rocheleau*, 2016 W. Va. LEXIS 618 (2016). See also THOMPSON, *supra* note 37, at § 70.07(k)(4) for a more comprehensive assessment of the state of the law by jurisdiction.

65. See, e.g., *Reniere v. Gerlach*, 752 A.2d 480, 484 (R.I. 2000) (“Although almost a century has passed since [Rhode Island’s formulation] of waste was laid out in *Chapman*, we adhere to it today. . .”).

66. See, e.g., *Meyer v. Hansen*, 373 N.W.2d 392 (N.D. 1985) (holding that a seller of a hotel, to whom the property reverted following the buyers’ default on payments, may sue the buyers for waste); *W. Asset Corp. v. Goodyear Tire & Rubber Co.*, 759 F.2d 595 (7th

Beyond this, the principles underlying waste law — the duty of the tenant and the rights of remainderpersons — remain live in judicial opinions and debates today. Professor John Lovett has argued convincingly that conflicting recent rulings in Louisiana regarding the duty of mineral rights lessees to restore the surface are evidence that waste law, rather than being dated, is simply undergoing a transformation in a changing legal context.<sup>67</sup> Lovett identified similar phenomena in cases involving insurance proceedings in the wake of Hurricane Katrina.<sup>68</sup> Though not widely invoked, waste remains a viable cause of action for modern plaintiffs, and the principles underlying waste remain good law.

The tenants' duties under waste law are expansive. While hornbooks and treatises on property agree that actions can constitute waste if they are contrary to the course of "good husbandry," what precisely constitutes good husbandry may have changed since waste was last a well-known claim.<sup>69</sup> A survey of cases over the last century reveals a wide variety of circumstances which have given rise to successful claims for permissive waste, including at least one example of a failure to "farm the premises in a good and farmerlike manner."<sup>70</sup> Most examples of permissive waste are similarly concerned with damage caused to real property by poor or negligent practices, such as allowing a house in good repair to rot by failing to repair damage to a roof.<sup>71</sup> However, because the basis of a waste claim is not physical damage, but rather an injury to a remainderperson's future interest in a property, the actions leading to a proper permissive waste claim need not be a concrete failure to keep a property in good repair. Failure to pay property taxes, for instance, can qualify as permissive waste where the failure is so extreme as to result in a tax sale or similar action that will harm the remainderperson's interest in the property.<sup>72</sup> As one treatise notes, "[t]here is an infinite varie-

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Cir. 1985) (holding that a lessor of property may sue for waste); *Waterman v. Mackenzie*, 138 U.S. 252 (1891) (holding the same for mortgagees).

67. See Lovett, *supra* note 41, at 1247.

68. See *id.* at 1248.

69. See, e.g., POWELL, *supra* note 36, at § 56.05; see also THOMPSON, *supra* note 37, at § 70.08.

70. *Olson v. Bedke*, 555 P.2d 156, 161 (Idaho 1976).

71. See *Smith v. Smith*, 241 S.W.2d 113, 114 (Ark. 1951).

72. See *Travelers Ins. Co. v. 633 Third Assocs.*, 14 F.3d 114, 123 (2d Cir. 1994). See also *Pike v. Wassell* 94 U.S. 711, 715 (1876) ("The defendants . . . have determined not to pay the taxes upon the property. The danger of incumbrance by reason of this failure to

ty of allegedly actionable conduct by offending occupants that may qualify as waste.”<sup>73</sup>

A Connecticut case, *Zauner v. Brewer*, demonstrates that the tenant’s affirmative duties under the law of waste apply even in the absence of permanent damage to the property. *Zauner* concerns a property willed by a testator to her friend for the term of her natural life, and thereafter to testator’s son.<sup>74</sup> The plaintiff, who was the wife and sole devisee of the testator’s son, sued after learning that the life tenant had leased the property to someone else. One component of the action was a waste claim, which was based on the “comparatively deteriorated” condition of the property.<sup>75</sup> An affidavit from a building inspector asserted that defendant had failed to make “a number of ordinary repairs necessary to preserve the property,” an assertion supported by the defendant’s own testimony.<sup>76</sup> The defendant maintained, however, that her conduct did not rise to the level of waste because it did not result in “permanent and substantial” injury to the property.<sup>77</sup> The Connecticut Supreme Court rejected this argument, noting that the duty to maintain was more complex than simply keeping the property from being permanently damaged. The court held:

The tenant not only has the duty to make the ordinary repairs required to remedy a presently existing condition of substantial disrepair that may have injured the property substantially or permanently, but also has the duty to make any ordinary repairs necessary to *prevent the property from progressively declining* to the point where its deterioration, and the resultant injury to the inheritance, is substantial or permanent.<sup>78</sup>

The court called this “preventive ordinary repairs,” and noted by way of example that “if a roof is needed, [the tenant] is bound

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perform their duties as tenants for life is, therefore, imminent, and the case a proper one for a court of equity to interfere and grant appropriate relief.”); *Capitol Bankers Life Ins. Co. v. Amalgamated Tr. & Sav. Bank*, 1993 U.S. Dist. LEXIS 6032, 13 (N.D. Ill. 1993).

73. POWELL, *supra* note 36, at § 56.05.

74. *Zauner v. Brewer*, 596 A.2d 388, 389 (Conn. 1991).

75. *Id.* at 392.

76. *Id.* (internal quotation marks omitted).

77. *Id.*

78. *Id.* at 393 (emphasis added).

to put it on; if paint wears off, he is bound to repaint.”<sup>79</sup> That rehabilitative repair was possible before the property passed to the remainderperson, the court noted, “does not . . . justify the suspension of such an owner’s ability to obtain relief. . . .”<sup>80</sup>

Permissive waste is, in part, premised on questions of foreseeability and prudence. The central concern is not simply whether the tenant failed to make necessary repairs and maintain the land in good form, but whether such failure could foreseeably lead (or, where injury had already occurred, would have foreseeably led) to the damage. Damage from the elements, for instance, is one of the most common examples of an injury which, when sustained by an omission of the tenant, can be considered permissive waste.<sup>81</sup> The effects of weather can be expected and accounted for by a reasonable tenant, and thus the tenant is obligated to prevent such effects. The tenant “could not permit [a window] to remain out and the storms to beat in,” or “a shingle or board on the roof to blow off . . . [and] water, in time of rain, to flood the premises,” because “a slight effort and expense on his part could save a great loss. . . .”<sup>82</sup> The general rule in the United States has been that tenants are liable for all waste injuries, even those committed by strangers, excepting only those injuries caused by “act[s] of God, public enemies, or the [remainderperson].”<sup>83</sup> Indeed, several courts have been even more strict, holding that tenants are required to make repairs even when an injury occurs due to an act of God.<sup>84</sup> This proposition has been carried to extremes; in a Maryland case, *White v. Wagner*, a tenant was held liable for the destruction of property by a “lawless multitude,” because his use of the property as a site for distribution of his newspaper led to the mob’s presence, which he could have reasonably foreseen.<sup>85</sup>

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79. *Id.* (internal citations and quotation marks omitted).

80. *Zauner v. Brewer*, 596 A.2d 388, 396 (Conn. 1991).

81. *See, e.g.*, *Smith v. Smith*, 241 S.W.2d 113, 114 (Ark. 1951) (noting that it is permissive waste to fail to make repairs to protect a building from “wind and rain”).

82. *Suydam v. Jackson*, 54 N.Y. 450, 454 (1873).

83. *Moore v. Townshend*, 33 N.J.L. 284, 302 (1869) (“It is common learning that every lessee of land, whether for life or years, is liable in an action of waste to his lessor, for all waste don on the land in lease by whomsoever it may be committed . . . with the exception of acts of God, public enemies, and the acts of the lessor himself.”).

84. *See, e.g.*, *Polack v. Pioche*, 35 Cal. 416, 422 (1868).

85. *White v. Wagner*, 4 H. & J. 373, 391–92 (Md. 1818). Jacob Wagner was an editor, publisher, and distributor of the *Federal-Republican*, a Baltimore newspaper that advocated Federalist views on the issues of the day, including what is now called the War of 1812. After war was declared, a group of citizens responded to the paper’s staunch anti-war stance by attacking the printing press and the homes of several of those involved in

*Zauner* and *White* indicate that the tenant's obligation to not allow the property to fall into disrepair goes further than simply preventing permanent injury to the property. If an omission could reasonably lead to permanent damage, it falls within the category of permissive waste; a remainderperson does not have to wait for the roof to break open and the floor to rot away before they can bring an action for waste. On this basis, Nadav Shoked argued that waste was an example of what he calls "the duty to maintain": "an affirmative duty to keep land in good repair . . . that forces owners to engage in certain activities *regardless of their own desires*."<sup>86</sup> Positioning waste law in this way — not as a minimal obligation to prevent permanent injury to the property, but as an affirmative duty to properly maintain the property — provides a clearer understanding of the tenant's obligations. It may not be illegal for a typical homeowner to fail to repair a fence or to let paint wear away, but if there is a remainderperson with a future interest, and if those actions will foreseeably lead to permanent damage, such actions can violate the law of waste. This broad understanding of permissive waste clarifies how waste law might apply to novel situations like climate change.

#### IV. WASTE LAW AND CLIMATE CHANGE

##### A. WASTE DOCTRINE IN ENVIRONMENTAL LAW SCHOLARSHIP

This Part focuses on the existing treatment of the law of waste in climate change scholarship and outlines how permissive waste could form the basis of a claim intended to force climate adaptation measures. This Part first discusses what little scholarship exists on the relationship between the law of waste and climate change before outlining what a permissive waste claim for failure to adapt to climate change might look like.

In balancing concurrent and future interests with the interests of present landholders, waste law provides a useful frame to think about the balancing of interests that naturally arises in

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its production, including Wagner. A few days later, Wagner and his associates resumed the printing and distribution from a newly-rented property, which was shortly thereafter completely destroyed by rioters. This became the basis for the litigation in *White*. For more on the riots, see Paul A. Gilje, *The Baltimore Riots of 1812 and the Breakdown of the Anglo-American Mob Tradition*, 13 J. SOC. HIST. 547 (1980).

86. Nadav Shoked, *The Duty to Maintain*, 64 DUKE L.J. 437, 441 (2014) (emphasis added).

considering climate adaptation, under which present generations must bear costs in order to improve the condition of future generations. Waste doctrine jurisprudence examines how the use of land can be negotiated between tenants and their remainderpersons; tenants cannot destroy the land and its improvements outright, for instance, and historically, could not make changes to the character of the land. Because permissive waste, in punishing tenants for their omissions, provides an understanding of what affirmative duties tenants have towards the land with respect to their remainderpersons, several scholars have accordingly looked to waste law for an understanding of what present owners' responsibilities are vis-à-vis future generations, and have used it to explain how the law can mediate environmental concerns between those currently living and those who will follow.

Professor Mary Wood has argued for an updated understanding of the doctrine as a powerful and necessary framework through which to view the government's obligations with respect to the environment.<sup>87</sup> Treating the environment as a resource held in trust by the government would naturally give rise to certain duties, among them a duty of care: the duty of the trustee to administer the trust responsibly, as though it were the trustee's own property and the trustee had the same goals and interests as the trust's beneficiaries.<sup>88</sup> Because waste doctrine and duties of trustees bear significant similarities, Wood briefly touches on the waste doctrine, calling it "a jealous guardian of future interests."<sup>89</sup> Wood argues that, just as the tenant is required to pass the estate to the remainderperson in the same state as it was received, "[e]ach living generation exists as a class comprised of Earth's life-tenants, assuming the duties of quasi-trustee for fu-

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87. See MARY CHRISTINA WOOD, *NATURE'S TRUST: ENVIRONMENTAL LAW FOR A NEW ECOLOGICAL AGE* (2013).

88. For a more complete exploration of the duty of care, see MARK L. ASCHER, WILLIAM F. FRATCHER, & AUSTIN W. SCOTT, *SCOTT AND ASCHER ON TRUSTS*, § 17.6 (5th ed. 2006). Wood's understanding of the public trust duty of care as applying to climate change obligations is a key part of the logic underlying *Juliana v. United States*, a landmark piece of litigation brought on behalf of twenty-one young plaintiffs against the president and several executive branch agencies, on the basis that government inaction on climate change had violated its public trust responsibilities. For more on the case, which is currently winding its way through district court, see Blumm & Wood, *supra* note 10. See also Complaint, *Juliana v. United States*, No. 6:15-cv-01517-TC (D. Or. filed Aug. 12, 2015), 2015 WL 4747094.

89. WOOD, *supra* note 87, at 170.

ture ‘remainder’ generations and bound by a lasting obligation to prevent waste to their ecological inheritance.”<sup>90</sup>

The waste doctrine, in this analysis, provides a potent analogy to the responsibilities of present generations and the rights of future generations. Other scholars have similarly pointed to waste doctrine as a guiding principle in reconciling the responsibilities of present and future interest holders, and are therefore useful in understanding environmental law.<sup>91</sup> These have generally noted that the waste doctrine is no longer widely invoked as a cause of action and is of limited use in an environmental litigation context,<sup>92</sup> but this Note argues that such a use may not be so limited.

More expansively, Professor Anthony Moffa explores waste as a concrete manifestation of the concept of sustainability, arguing that, contrary to critiques of sustainability as a poorly-defined policy standard, waste doctrine has made sustainability a key part of property law since the beginning of the common law.<sup>93</sup> Moffa frames the concept of sustainability as fundamentally rooted in an idea of intergenerational equity, obliging the current generation to “(1) . . . pass on the earth and its natural resources in the same or equivalent condition as it was when that generation first received it and (2) . . . repair any damage caused by a failure of any previous generation to do the same.”<sup>94</sup> This dual duty bears a clear resemblance to the doctrine of waste, and Moffa asserts that understanding sustainability as already incorporated into the law through waste can offer new understandings of sustainability and revitalize a stale policy debate.<sup>95</sup> Moffa dismisses the idea that waste doctrine could be the basis for climate change litigation, however, he argues that while a class action on behalf of future generations is legally comprehensible and theoretically justiciable, such an action should not be pursued.<sup>96</sup> Us-

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90. *Id.* at 171.

91. *See, e.g.*, Robert L. Glicksman, *Sustainable Federal Land Management: Protecting Ecological Integrity and Preserving Environmental Principal*, 44 TULSA L. REV. 147 (2008). *See also* Anthony L.I. Moffa, *Wasting the Planet: What a Storied Doctrine of Property Brings to Bear on Environmental Law and Climate Change*, 27 J. ENVTL. L. LITIG. 459, 461 (2012).

92. Glicksman, *supra* note 91.

93. Moffa, *supra* note 91, at 461.

94. *Id.* at 467.

95. *See id.* at 461.

96. *See id.* at 490. For discussion of *Juliana v. U.S.*, in which these issues are being litigated, *see supra* note 88; *see also* Blumm & Wood, *supra* note 10.

ing waste as the basis for such a suit faces a number of hurdles; the difficulty of proving standing for future generations in American courts and the need for the court to recognize new kinds of property interests (here the difficulty of establishing future generations as cognizable remainderpersons) is high enough to make any such claim prohibitively impractical, to say nothing of the formidable barrier that would be convincing the court to apply such a specific common law claim to large, conceptual issues.<sup>97</sup> Instead, like Wood, Moffa looks to the public trust doctrine as a more promising source of litigation.<sup>98</sup>

Both Wood and Moffa, as well as other scholars who have touched on the relationship between waste doctrine and climate change, see waste doctrine's principles as being relevant and compelling given the modern state of environmental law, but stop short of looking at it as a basis for litigation. The reasons for this are clear: beyond the numerous logistical and legal difficulties Moffa discusses with bringing a class-action waste claim, it is simply unlikely that waste could form the basis for the kind of sweeping litigation that restructures the government's relationship to the environment. Waste doctrine is ultimately fairly specific. While the tenant-remainderperson relationship is common enough that waste law has wide-ranging societal implications, it is not applicable in every situation, and, as Moffa notes, applying waste across generations requires property interests that courts do not recognize.<sup>99</sup> Wood's goal in *Nature's Trust* is to reframe the relationship between the U.S. government, the natural resources of the United States, and the people. Waste is simply inadequate for that kind of structural project. However, that is not a reason to dismiss waste as a source of litigation entirely. While fitting the relationship between the government and future generations into a tenant-remainderperson paradigm might be legally impractical (if conceptually simple<sup>100</sup>), legally cognizable tenant-remainderperson relationships do currently exist across

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97. See Moffa, *supra* note 91, at 490–93.

98. See *id.* at 491.

99. Moffa suggests conceiving of current generations as tenants, and future generations as remainderpersons, as in the Thatcher quote *infra* note 100. See Moffa, *supra* note 93, at 479–80.

100. See, e.g., Margaret Thatcher's pronouncement that: "No generation has a freehold on this earth. All we have is a life tenancy — with full repairing lease." MARGARET THATCHER, *THE COLLECTED SPEECHES OF MARGARET THATCHER* 341 (Robin Harris ed., 1997).

the United States. As such, waste doctrine might be usefully employed as a basis for action on climate change in smaller disputes.

## B. FINDING AN AFFIRMATIVE OBLIGATION TO CLIMATE ADAPTATION IN WASTE DOCTRINE

Rather than looking to waste law as a means to force the federal government to rethink its

approach to land use, it is more effective to ask what a tenant's obligations under waste doctrine ought to be in the modern era. Wood argues that "[a]gainst the backdrop of climate change, surging population levels, and collapsing resources, the [waste] doctrine must prove a great deal more exacting than when it first landed on the shores of America."<sup>101</sup> But waste doctrine, and the duties of the tenant as an aspect of permissive waste, need not become *more* exacting; rather, permissive waste must simply be adapted to the increasingly severe climate in a clear and straightforward manner.

Permissive waste, as discussed above, focuses primarily on imposing a duty on tenants to act where inaction will foreseeably lead to damage which is in the tenant's power to prevent or mitigate. Climate damage, in many cases, is both reasonably foreseeable and possible to avert. For example, almost two percent of U.S. homes — mostly in Florida, but also in major East Coast metropolitan areas like New York and Boston — are projected to be quite literally underwater by the end of the century, assuming a six-foot sea level rise.<sup>102</sup> For homeowners in coastal regions around the country, sea level rise, and its attendant threats like the so-called "king tide" flooding that can result from extremely high tides, is both foreseeable and predictable.<sup>103</sup> And it is not a

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101. WOOD, *supra* note 87, at 171 (citation omitted).

102. See Lauren Bertz, *Climate Change and Homes: Who Would Lose the Most to a Rising Tide?*, Zillow (Oct. 18, 2017), <https://www.zillow.com/research/climate-change-underwater-homes-2-16928/> [<https://perma.cc/69HV-DV8A>]. A sea level rise of six feet falls between 4.3 feet, the upper bound of what the National Climate Assessment considers "very likely" rise by 2100, and eight feet, which the report calls "physically possible, although the probability of such an extreme outcome cannot currently be assessed." U.S. GLOBAL CHANGE RESEARCH PROGRAM, CLIMATE SCIENCE SPECIAL REPORT: FOURTH NATIONAL CLIMATE ASSESSMENT, VOLUME I, CHAPTER 12: SEA LEVEL RISE (2017).

103. "King tides," also called "perigean spring tides," occur when tidal forces exerted by the sun and moon align in such a way to create extremely high tides that, while unusually high and apt to cause flooding, predictably occur once or twice a year. *King Tides and Climate Change*, U.S. EPA, <https://www.epa.gov/cre/king-tides-and-climate-change> [<https://perma.cc/9862-KSMP>] (last visited Jan. 4, 2019).

threat which is entirely beyond the homeowner's power. Coastal residents could, among other practices, pursue coastal armoring, the fortification of coastlines with structures to counteract erosion and flooding.<sup>104</sup> Other risks of climate change are foreseeable as well; extreme precipitation events, such as severe storms, are becoming both more intense and more frequent.<sup>105</sup> Reasonable homeowners in areas prone to extreme precipitation can make use of storm windows, among other improvements, to protect their properties.

Consider, then, the case of a person who is bequeathed a life tenancy in a coastal house in Florida, with the property passing after their death to some remainderperson. Some of the tenant's duties in that property are clear: they cannot destroy the house or make other improvements on the property to no particular end; tear up excessive amounts of trees; dig mineshafts on the property; or strip the house for copper wires and leave it an empty husk.<sup>106</sup> If a window is blown out, they must replace it; if the roof caves in, they have to patch it. By understanding waste doctrine as a question of foreseeability, it becomes possible to recognize additional duties that the tenant may bear. If the house is particularly vulnerable to storm damage by virtue of being located on the Florida coast, it may be incumbent on the tenant to take steps to protect it by adding storm shutters to the house. If tidal flooding is possible, and by inaction the tenant makes it more likely that any such flooding bears a risk of destroying the property, it is the tenant's duty to take what steps are necessary to preserve the condition of the property for the remainderperson.

### C. THE PERMISSIVE WASTE CLAIM FOR FAILURE TO ADAPT

Because at least some harms from climate change are foreseeable and within the power of the tenant to avert, failure to pursue those strategies which can avert or mitigate climate change harms form a plausible basis for a permissive waste claim. Plau-

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104. See *What is Shoreline Armoring?*, NAT'L OCEANIC & ATMOSPHERIC ADMIN., <https://oceanservice.noaa.gov/facts/shoreline-armoring.html> [<https://perma.cc/5GLX-TZA5>] (last visited Mar. 19, 2019). Shoreline armoring is chosen here specifically because its implementation often raises other ecological concerns. See *infra* Part IV.A.

105. See *Extreme Weather*, NAT'L CLIMATE ASSESSMENT, <https://nca2014.globalchange.gov/highlights/report-findings/extreme-weather> [<https://perma.cc/SKX6-C8BK>] (last visited Mar. 30, 2019).

106. See POWELL, *supra* note 36, at § 56.05.

sible plaintiffs for such a claim are those discussed so far in this Note as “remainderpersons,” a class consisting of holders of concurrent or future interests in real property which they do not currently possess.<sup>107</sup> This includes lessors, mortgagees, and assignees designated by wills.<sup>108</sup> Therefore, possible defendants include all tenants, including those previously mentioned as well as holders of life estates or tenancy for years in real property.

In bringing such a claim, plaintiffs will have to show either that inaction by the defendant has led to injury to the property, or that inaction will lead to future injury.<sup>109</sup> It is not necessary to establish that climate change itself will lead to increased likelihood of, for example, extreme weather events or flooding. It is only necessary to show that such events are sufficiently likely or occurring frequently enough to be a foreseeable occurrence for which the defendant must prepare. Also, these claims should be brought promptly. While the limitations on the right to bring waste claims varies by jurisdiction, generally speaking, common law waste actions for harms which have occurred will accrue from the date of the injury.<sup>110</sup> Claims for inactions which have yet to lead to injury may toll relevant statutes of limitations when the plaintiff becomes aware of the defendant’s inaction, though some jurisdictions hold that no cause of action for waste accrues for statutes of limitations purposes until the death of the tenant.<sup>111</sup> Similarly, while the proof required to establish a claim for permissive waste may vary by jurisdiction, generally “willful, wanton, or malicious” conduct must only be proven in cases where punitive damages are sought.<sup>112</sup> Money damages are the typical remedy for claims of permissive waste; however, injunctions and other equitable remedies may also be appropriate to prevent offending conduct.<sup>113</sup>

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107. See THOMPSON, *supra* note 37, at § 70.09.

108. See *id.*

109. For an example of the former, see *Olson v. Bedke*, 555 P.2d 156 (Idaho 1976). For an example of the latter, see *Zauner v. Brewer*, 596 A.2d 388 (Conn. 1991).

110. See POWELL, *supra* note 36, at § 56.12.

111. See, e.g., *Fradkin v. Northshore Util. Dist.*, 96 Wn. App. 118, 122 (Wash. Ct. App. 1999) (holding that, under a discovery rule, a cause of action accrued when plaintiff became aware of omission); *Fisher’s Ex’r v. Haney*, 180 Ky. 257, 261 (Ken. Ct. App. 1918) (holding that a cause of action for permissive waste does not begin to accrue until the death of the life tenant).

112. THOMPSON, *supra* note 37, at § 70.10.

113. *Id.*

## V. THE VALUE OF WASTE CLAIMS FOR FAILURE TO ADAPT

With the possibility of a waste claim for failure to pursue climate adaptation measures established, this Part discusses the difficulties inherent to mounting such a claim, including the narrow scope and possibly low number of plausible plaintiffs. This Part then addresses the value of such a claim despite these the difficulties: the narrow focus and small scale of a permissive waste claim for failure to adapt to climate change may make it easier to get courts to acknowledge that such harms are foreseeable, and that the paradigmatic shift involved in making climate change adaptation a duty of ordinary citizens rather than governments and corporations is necessary to combat climate change.

### A. PROBLEMS OF THE PERMISSIVE WASTE APPROACH

The approach of mandating climate adaptation by means of a permissive waste claim, while novel, bears some obvious flaws that make permissive waste claims unlikely to be widely employed for climate adaptation purposes. These flaws include the stringent circumstances required for such a claim to be actionable, the difficulty of litigating, and the uncertainty of achieving a plaintiff's desired goals as a result of such a claim. Nevertheless, the strength and importance of such a claim lies in its accessibility to individual actors and its reframing of the duty to climate resilience.

First, the narrow set of circumstances which can give rise to a waste claim limits the claim's usefulness in climate change adaptation. "Tenant" and "remainderperson" are stand-in terms for a broad array of relationships, including lessor-lessee, mortgagor-mortgagee, and life tenant and remainderperson or reversioner.<sup>114</sup> Arrangements which have historically led to waste claims, such as when a decedent wills their property to some heir as a life tenant and thereafter to some assignee, are declining in favor of other arrangements (e.g., trusts) instead.<sup>115</sup> Where such arrangements or legal relationships do still exist, they are not always amenable to an action for permissive waste premised on a

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114. For a fuller exploration of the types of relationships which can lend themselves to a claim for waste, see Part II.B., *supra*. See also POWELL, *supra* note 36, at § 56.04.

115. Posner, *supra* note 41, at 1096.

failure to pursue climate resilience policies. A tenant in multi-unit housing, for instance, is unlikely to be able to make repairs or improvements to a property which protect it against the damages of climate change. Moreover, many of these relationships are governed by contract, generally with the specific contractual terms of the tenant's duty to repair and improve the property clearly outlined. As a default rule, waste is therefore pre-empted by these contractual arrangements.<sup>116</sup>

Second, even when a relationship exists that is otherwise amenable to a permissive waste claim, the property itself may not be suitable for such a claim. The effects of climate change are and will be wide-ranging and pervasive. For litigation purposes, however, potential plaintiffs will want to ensure that their claim includes foreseeable risks and damages, as in the example of a vulnerable coastal property in an area prone to flooding. The clearer and more quantifiable the potential harms of inaction, the stronger the claim will be.

Third, finding willing plaintiffs for a waste claim may prove difficult. Standing for typical environmental claims is often difficult to prove in the absence of provisions for citizen suits or similar guarantees.<sup>117</sup> Permissive waste claimants, who by necessity must be legally connected to the property at issue, are unlikely to face difficulties establishing standing. However, not only are such potential claimants difficult to locate, they must also have sufficient interest in combating climate change to pursue this novel legal claim. Several classes of potential claimants, like banks (as mortgagees) and large landholders (as lessors), are the types of profit-motivated corporations historically less likely than traditional activist litigants to pursue novel environmental litigation, even where conditions are otherwise suitable.<sup>118</sup> To begin litigation, then, it becomes necessary to find: a tenant-remainderperson relationship where the terms of the duty to

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116. See *Bitler Inv. Venture II, LLC v. Marathon Petroleum Co. LP*, 741 F.3d 832, 837 (7th Cir. 2014); see also Lovett, *supra* note 41, at 1220.

117. For a discussion of the difficulties faced in making private claims for climate change damages generally, see Niran Somasundaram, *State Court Solutions: Finding Standing for Private Climate Change Plaintiffs in the Wake of Washington Environmental Council v. Bellon*, 42 *ECOLOGICAL Q.* 491 (2015).

118. *But see Tracking Climate Progress 2017*, CDP WORLDWIDE, <https://www.cdp.net/en/research/global-reports/tracking-climate-progress-2017> [https://perma.cc/7ZSP-W8SG] (last visited Mar. 25, 2019). CDP (formerly the Carbon Disclosure Project), notes a marked increase in concern for sustainability and climate adaptation in its voluntary response survey tracking over 1,000 companies.

maintain are not already contractually decided; a relationship which is centered on a piece of property which is obviously or foreseeably subject to climate change damage; and a plaintiff who is willing to carry out a litigation claim of uncertain success and efficacy. The class of plaintiffs that is both eligible for and likely to bring a waste action over a failure to pursue climate resilience is, therefore, likely very small.

Fourth, a plaintiff will face significant issues in getting a court to recognize and validate their claim, both because they will be presenting a novel argument and because climate change litigation in general faces significant evidentiary problems. Though waste remains a live doctrine, waste claims are significantly rarer than they were a century ago.<sup>119</sup> Courts may consequently be unfamiliar with adjudicating waste claims. Consider the Rhode Island Supreme Court in *Reniere v. Gerlach*, which began its analysis of the waste claims involved by musing that the court had last laid out its rules for waste claims nearly a century ago.<sup>120</sup> A plaintiff in such a case faces the difficulty of convincing the court that an old, potentially unfamiliar law that was historically responsive to issues like broken windows and unrepaired fences is an appropriate premise on which to base their claims. The diverse and varying treatment of waste doctrine in different jurisdictions would also affect potential suits. While some states have codified the waste doctrine into statute, others continue to treat it as a common law issue, making it difficult to develop a generalized approach to the claim.<sup>121</sup>

Fifth, an action for permissive waste premised on a tenant's failure to make reasonable adaptations to risks posed by climate change faces some of the same evidentiary challenges as other climate change litigation. Establishing that specific greenhouse

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119. See Posner, *supra* note 41, at 1099 n.9; see also Merrill, *supra* note 41, at 1085 n.140.

120. See *Reniere v. Gerlach*, 752 A.2d 480, 484 (R.I. 2000).

121. For an example of a state where waste remains a common law action, see *Keesecker v. Bird*, 490 S.E.2d 754 (W.Va. 1997). For an example of a state where waste has been codified, see *Vollertsen v. Lamb*, 732 P.2d 486 (Ore. 1987). Note, however, that the *Vollertsen* Court declined to consider the question of whether an action at common law for waste could be sustained in the presence of a statute codifying waste. Waste claims remain a common law issue at the federal level. See *Spodek v. United States*, 73 Fed. Cl. 1, 8 (2006) (though note the court's difficulty in deciding whether an action for waste properly sounds in tort or is a violation of a contractual duty). For a discussion of statutory displacement in climate change litigation more generally, see UNITED NATIONS ENVIRONMENT PROGRAMME, *supra* note 22, at 34.

gas-emitting activities lead to particular localized harms can be difficult.<sup>122</sup> The waste action avoids these issues in part, because the issue at hand is not whether the tenant is causing climate change-related injuries, but simply how they respond to potential or actual injuries that are a result of climate change. However, the waste claim still invokes climate science to some degree. An action for permissive waste which attempts to enjoin a tenant to make adaptations to extreme weather events will need to establish that extreme weather events are foreseeable in order to show that the defendant has incurred liability by failing to prepare for such events. This may prove an easier task than showing a link between emissions and extreme weather events, but still presents a barrier that plaintiffs must surmount.<sup>123</sup>

Finally, even if a plaintiff could successfully bring a claim of permissive waste on a theory of failure to adapt to climate change, the appropriate remedy may not be clear or, even if clear, may not be awarded. What remedy properly addresses injury in a waste case is a subject of some debate, and may vary according to the nature of the concurrent or future interest at stake.<sup>124</sup> In general, however, courts favor damages when possible, except in cases where money relief is inadequate, for example, with repeated violations of the duty to maintain.<sup>125</sup> If damages are found to be appropriate, this presents its own issues. Under the theory that tort law serves as a system of economic deterrence, damages help control the incidence of a given violation, assuming that po-

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122. For more on what types of activities generate greenhouse gases, see *Sources of Greenhouse Gas Emissions*, US EPA, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions> [<https://perma.cc/3J37-EJ7C>] (last visited Jan. 4, 2019). Such activities exacerbate climate change globally. However, much of the exploratory climate change impact litigation so far has attempted to make the case that a given emitting activity can be linked to particular *local* harms, which is a difficult causal chain to establish. See Jacqueline Peel, *Issues in Climate Change Litigation*, 5 CARBON & CLIMATE L. REV. 15, 18–22 (2011) (discussing the problem of proof in climate change litigation).

123. See Sophie Marjanac et al., *Acts of God, Human Influence, and Litigation*, 10 NATURE GEOSCIENCE 616 (2017) (discussing the increasing ease of predicting extreme weather events and attributing their effects to climate change); Maxine Burkett, *Litigating Climate Change Adaptation: Theory, Practice, and Corrective (Climate) Justice*, 42 ENVTL. L. REP. 11144, 11150 (2012) (discussing the difficulty of showing a causal link between extreme weather events and climate change to the satisfaction of courts, and arguing that such a showing is easier in adaptation litigation than litigation against emitters).

124. See *White Mt. Apache Tribe v. United States*, 249 F.3d 1364, 1381 (Fed. Cir. 2001), *aff'd*, 537 U.S. 465 (2003) (noting that while injunctions are often the appropriate remedy in cases involving contingent future interests, damages may be appropriate where a future interest is indefeasibly vested).

125. THOMPSON, *supra* note 37, at § 70.10.

tential injurers will adjust their actions in order to maximize the utility of violating a given duty less the costs of non-compliance.<sup>126</sup> In an action for waste, unless punitive damages are appropriate, an action premised on foreseeable future injury is unlikely to result in particularly high damages. Though multiple damages for waste (traditionally, treble damages) are sometimes authorized by statute, they are generally discretionary and only ordered when a defendant's conduct has been particularly flagrant.<sup>127</sup> If damages are relatively low, then tenants may generally continue to decline to take steps towards climate change adaptation. Even where injunctions are held to be appropriate, they may not always adequately satisfy a plaintiff's goals.

In cases involving sea-level rise, for instance, a court or tenant may determine that coastal armoring is the best means to protect the property. While coastal armoring may prove effective in preventing flooding and erosion, it may be disfavored by environmental groups for other strategies such as beachline nourishment or managed retreat.<sup>128</sup> Placing too much emphasis on the effect of climate change on individual parcels, rather than considering the effect on the shoreline as a whole, may exacerbate shoreline issues overall, in an echo of the same failure to consider externalities that have already made climate change so threatening. Finally, it is not entirely clear from the case law how far the duty to make general repairs and maintain property extends.<sup>129</sup> One treatise asserts that "the tenant is under no duty to expend more than the income that can be generated from the land, or, if the life tenant personally occupies the land, the rental value thereof, in order to discharge [affirmative] duties"; however, the cases cit-

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126. For the canonical discussion of tort law as a system of deterrence, see GUIDO CALABRESI, *THE COST OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS* (1970). See also WILLIAM M. LANDES & RICHARD POSNER, *THE ECONOMIC STRUCTURE OF TORT LAW* (1987).

127. See THOMPSON, *supra* note 37, at § 70.10.

128. Beachline nourishment involves adding additional sand to replace shoreline lost to erosion or sea-level rise, while managed retreat is a strategy that focuses on allowing the shoreline to move inland. For more on these and other responses to sea-level rise, see David L. Markell, *Emerging Legal and Institutional Response to Sea-Level Rise in Florida and Beyond*, 42 COLUM. J. ENVTL. L. 1 (2016); ANNE SIDERS, *MANAGED COASTAL RETREAT: A LEGAL HANDBOOK ON SHIFTING DEVELOPMENT AWAY FROM VULNERABLE AREAS* (2013); Molly Loughney Melius & Margaret R. Caldwell, *2015 California Coastal Armoring Report: Managing Coastal Armoring and Climate Change Adaptation in the 21st Century* (2015), <https://law.stanford.edu/wp-content/uploads/2015/07/CalCoastArmor-FULL-REPORT-6.17.15.pdf> [<https://perma.cc/MD2E-X9ZK>] (focusing on Californian concerns particularly but offering a useful primer on the range of response to sea-level rise).

129. See WILLIAM STOEBUCK & DALE WHITMAN, *LAW OF PROPERTY* § 4.3 (3d ed. 2007).

ed on this issue are unclear on the origin of this limitation.<sup>130</sup> In more recent rulings, this limitation on the duty to repair and maintain does not appear. It is unclear whether this is because the issue is immaterial for most waste claims, because the limitation has fallen out of favor, or because of some other reason. Assuming such a limitation on the duty to repair does exist, this may make it more difficult to extract meaningful climate adaptation concessions from tenants.

#### B. THE STRENGTHS OF A WASTE CLAIM FOR FAILURE TO ADAPT TO CLIMATE CHANGE

Despite the problems, there is value to asserting that the duty to repair and maintain implies a duty to protect real property from the injuries of climate change. Generally, tort litigation over climate change claims serves as a means for private actors to enlist the judiciary in their efforts to seek greater governmental action and guidance on climate change.<sup>131</sup> Common law claims are properly justiciable by the courts, enabling judges to respond without fear of speaking on a question more properly answered by one of the other branches.<sup>132</sup> Even should judges overreach in identifying certain claims as cognizable and remediable, this serves as a beneficial prod to legislatures to create statutes responsive to the issue in question, making the courts a means by which private actors can call the government to action.<sup>133</sup> Litigation focused on a duty to adapt, rather than a duty to mitigate, faces fewer issues in proving causation and can be brought against a wider range of potential defendants, thereby increasing the opportunities to promote and provoke action on climate change.<sup>134</sup>

What waste law brings to the table in particular is the recognition of a duty to pursue climate adaptation measures not only for governmental actors and developers, but also for individual tenants and private citizens. So far, most climate change adapta-

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130. *Id.* The cases in question are *In re Stout's Estate*, 151 Or. 411 (1936) and *Nation v. Green*, 123 N.E. 163 (1919).

131. For a fuller discussion of this, see Douglas A. Kysar & Benjamin Ewing, *Prods and Pleas: Limited Government in an Era of Unlimited Harm*, 121 YALE L.J. 350 (2011) (in particular, Parts II and IV).

132. *Id.* at 412.

133. *Id.* at 423.

134. See Burkett, *supra* note 123, at 11145.

tion litigation has focused primarily on governments and corporations, or otherwise on specific development projects, like airport expansions or development on coastlines.<sup>135</sup> Such actors, who may have pre-existing commitments to combat climate change or long-term access to enough research and forecasts to understand the potential risks of climate change, are attractive defendants, not least because they may have enough institutional power to make a meaningful difference in climate change adaptation. On the other hand, the private actors who would be targeted by a claim for waste have minimal power to impact climate change adaptation on a broader level, and as noted earlier may even prove counter-productive as defendants in that they cannot coordinate responses to climate change. The value in a waste claim, rather, is that a recognized duty to pursue climate adaptation under a permissive waste theory establishes that first, increased climate harms, no matter their origin, are foreseeable by an ordinary individual; and furthermore, that the responsibility of addressing such harms falls not only on large institutional actors, but on private individuals as well.

Even the smallest climate change-oriented waste claim requires a plaintiff to establish, and a court to acknowledge, that climate change injuries, such as regular flooding or the sea level rising, are foreseeable. We remain in what one analysis calls “a realm of foreseeable unforeseeability, of routine but unpredictable catastrophe,” in which we are all generally aware of the broad injuries posed by climate change, but any individual harm is difficult to predict.<sup>136</sup> By narrowly focusing the question of foreseeability in space (since waste claims apply to specific parcels of land) and framing the issue as a question of waste (in which irregular but generally expected events like storms are considered foreseeable), it becomes clearer that tenants are more than capable of preparing for climate change injuries generally even if they cannot specifically anticipate a given flood or storm. This makes it possible for courts to recognize, under a theory of permissive waste, that tenants have a duty to pursue climate change adaptation to reduce such injuries. Such a recognition would not be small; establishing that harms of climate change are foreseeable is at the core of major litigation currently working its way

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135. See UNITED NATIONS ENV'T PROGRAMME, *supra* note 22, at 14.

136. R. Henry Weaver & Douglas Kysar, *Climate Change and the Adjudication of Catastrophe*, 93 NOTRE DAME L. REV. 295, 307 (2017).

through the courts.<sup>137</sup> The recognition that climate injuries are foreseeable, even at this small scale, would be a useful basis for further litigation.

More abstractly, permissive waste claims for failure to adapt to climate change place a duty to affirmatively pursue climate adaptation on a class that can include ordinary individual citizens as well as government or corporate tenants. As discussed earlier, most efforts to outline such a duty so far have focused on governments or corporations.<sup>138</sup> This approach is sensible, and those defendants have the most power to enact climate adaptation measures. Nevertheless, full adaptation to climate change will require buy-in from all stakeholders, not merely those with the most power, and that includes the individual tenants encompassed by a permissive waste claim. In broadening the duty to pursue climate adaptation, the permissive waste claim brings us closer to the point where fighting climate change is recognized not only as a critical duty of governments and powerful multinational corporations, but also as a universal duty in which we must all participate.

## VI. CONCLUSION

Waste law, in mediating between present and future interests, offers us one of the clearest embodiments of the principle of intergenerational equity in the common law. As one of the oldest common law claims, it provides us with a certainty that the law has always been equipped to constrain the actions of current actors in defense of the interest of future owners. Yet the value of the law of waste need not be merely theoretical. Permissive waste, as it currently exists, implies a duty to pursue climate resilience strategies. It falls to the courts simply to recognize that duty.

As the harms of climate change become more apparent and severe, the importance of climate change adaptation and resilience strategies only increases. Cutting-edge litigation currently working its way through the courts, like the Conservation Law Foundation's suit against ExxonMobil for failing to prepare for the risks of extreme weather events and flooding in the construc-

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137. See *infra* note 139.

138. See *supra* Part I.

tion of its Everett, Massachusetts oil terminal, looks to hold corporate and governmental actors accountable for their laxity in responding to climate change.<sup>139</sup> Promising efforts like this are critical to eliciting action on climate change adaptation from governments and corporations. However, these are slow-moving actors and do not themselves account for the entire range of possible climate adaptation strategies. In the effort to prepare the planet for the increasing and incoming effects of climate change, it is worthwhile to impose a more widely applicable legal duty to adapt, and we may not need novel legal tools to do so. The effects of climate change are not just reasonably foreseeable; they have already arrived. All that remains is for courts to recognize that fact.

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139. For a fuller account of the case CLF is bringing against ExxonMobil, see Complaint, Conservation Law Found. v. ExxonMobil Corp., No. 1:16-cv-11950 (D. Mass. filed Sept. 29, 2016), <http://www.clf.org/wp-content/uploads/2016/09/CLF-v.-ExxonMobil-Complaint.pdf> [<https://perma.cc/P55L-9T9Q>].