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Empowering Family Forestland Owners to Reduce Wildfire Risk

Tom Lininger
University of Oregon, lininger@uoregon.edu

EMPOWERING FAMILY FORESTLAND OWNERS TO REDUCE WILDFIRE RISK

Tom Lininger[*]

Wildfire risk is growing in the forested portion of the Wildland-Urban Interface, especially in the Western United States. Some commentators have suggested that the time has come for measures that would reduce the human presence in this area. In certain circumstances, however, family forestland owners have a salutary effect on forest resiliency. The attempt to exclude family forestland owners would create more problems than it would solve. A better strategy would be to assist family forestland owners in fireproofing their residences and improving the health of their forests.

[*] Orlando J. and Marian H. Hollis Professor, University of Oregon School of Law. Before entering academia, I worked as a civil attorney suing polluters and as a prosecutor handling environmental cases (among other categories of cases). I have served as a technical advisor on climate change litigation. I formerly served as a director of the Oregon Natural Resources Council. This Article benefited from careful editing by the staff of the *Georgia Law Review* and from helpful comments by participants in the symposium on March 22, 2024.

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I. INTRODUCTION

I appreciate the opportunity to participate in the *Georgia Law Review*'s 2024 symposium, *Evolving Landscapes: American Land Use Law and Resiliency*. The organizers of this symposium, Braden Meadows and Austin Headrick, have a done a great job assembling a roster of participants with varying perspectives and scholarly interests. Thanks also to the University of Georgia School of Law for its hospitality.

My contribution to this symposium addresses resiliency in the forested portion of the Wildland-Urban Interface[1] (the forested WUI), especially in the Western United States. I will focus on two questions: First, does the growing wildfire risk in the forested WUI necessitate measures to reduce the human presence in this area, e.g., through construction moratoria, insurance retreat, or relocation of residential populations?[2] Second, are other strategies available that could improve fire safety and promote environmental protection without unduly burdening landowners?[3] I will conclude by addressing some foreseeable objections to my analysis and recommendations concerning wildfire resiliency in the forested WUI.[4]

I approach this subject with a background in forest management and environmental advocacy. My family owns and resides on 240

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[1] The Wildland-Urban Interface is the area where "structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels." *What Is the WUI?*, U.S. FIRE ADMIN. (June 8, 2022), https://www.usfa.fema.gov/wui/what-is-the-wui.html [https://perma.cc/WM8P-HENQ]. A recent inventory found that the WUI makes up 9.4% of the total land in the contiguous United States. Volker C. Radeloff et al., *Rising Wildfire Risk to Houses in the United States, Especially in Grasslands and Shrublands*, 382 SCIENCE 702, 705 (2023). The WUI consists of two zones: (1) "Intermix WUI," where houses intermingle with wildland vegetation, and (2) "Interface WUI," where residential properties contain less vegetation but are near large wildland vegetation areas. *Id.* at 702. Throughout the continental United States, 53.8% of the intermix WUI consists of forests. *Id.* In the fire-prone Western United States, though, grasslands and shrublands make up a higher percentage of the intermix WUI than do forests. *See id.* ("Especially in those western states where wildfires are most prevalent, grasslands and shrublands dominate the intermix WUI . . . . For example, in California, 52.3% of the Intermix WUI is grassland and shrubland and only 30.1% is forest.").

[2] *See infra* Part I.

[3] *See infra* Part II.

[4] *See infra* Part III.

acres of forested property that is four miles from the city of Eugene, Oregon. We have converted a significant portion of our forestland into state-certified wildlife management and conservation zones. We are devoting a huge amount of time and energy to improving the health and fire-hardiness of our forest. I also have a full-time job as a law professor at the University of Oregon, so I am a "weekend forester," like many small woodland owners in the forested WUI. I have written extensively about the urgency of environmental protection,[5] and I practiced environmental law before entering academia. I believe that this background gives me a unique vantage point from which to evaluate various policy proposals that seek to reduce fire risk, advance ecological goals, and protect various human interests in the forested WUI. I also recognize that my personal stake in the issue might give me a bias that I should acknowledge at the outset.

The space constraints of a symposium piece only allow for a cursory treatment of several important issues relating to wildfire

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[5] For what it's worth, my scholarship generally pushes for ambitious reforms to promote environmental protection. I hope this body of work lends credibility to my argument that environmental concerns actually militate *against* draconian restrictions on family forestland owners. *See generally* Tom Lininger, *No Privilege to Pollute: Expanding the Crime-Fraud Exception to the Attorney-Client Privilege*, 105 MINN. L. REV. 113 (2020) (arguing that the crime-fraud exception should extend to civil violations of environmental law); Tom Lininger, *Green Ethics for Judges*, 86 GEO. WASH. L. REV. 711 (2018) (proposing amendments to the Model Code of Judicial Ethics that would help resolve issues in environmental cases); Tom Lininger, *Green Ethics for Lawyers*, 57 B.C. L. REV. 61 (2016) (providing similar amendments to the Model Rules of Professional Conduct to motivate environmental protection). Some critics say that my articles advocate too many sacrifices for the sake of environmental protection. *See, e.g.*, David L. Hudson, Jr., *Breaking the Law: How the Crime-Fraud Exception Can Threaten Attorney-Client Privilege*, 109 A.B.A. J., Oct./Nov. 2023, at 20, 21 (2023) (citing critics who oppose weakening attorney-client privilege); Vanderbilt University, *ELPAR and ELI Present the 2019 Nashville Symposium: Green Ethics for Judges*, at 35:58, 39:07, YOUTUBE (Mar. 25, 2019) https://www.youtube.com/watch?v=grZ4V22FzJk (complaining that the suggestions in my 2018 article were "radical" and "would have us make a value judgment that large-scale harm to human health or to the environment is more important than any . . . harm to, for example, property"); Scott H. Greenfield, *Legal Ethics in the Age of Feelz: What Else You Got?*, SIMPLE JUST. (June 7, 2016), https://blog.simplejustice.us/2016/06/07/legal-ethics-in-the-age-of-feelz-what-else-you-got/ [https://perma.cc/AU42-YURE] (characterizing my 2016 article as "radical" and "horseshit tied up in a pretty green bow"); PDB, Comment to *Legal Ethics in the Age of Feelz: What Else You Got?*, *supra* note 5 ("Maybe if Lininger [and two other pro-environmental authors] closed their mouths, they would prevent the release of so much hot air that the global warming problem would be solved.").

risk in the forested WUI. It will be necessary to fill in some of the gaps with future scholarship, and I welcome the opportunity to confer with other authors who are exploring the topic of resiliency in the forested WUI, including authors who may disagree with some of my analysis and recommendations.

II. SHOULD WE TRY TO REDUCE THE HUMAN PRESENCE IN THE FORESTED WUI?

The WUI has transformed over the last several decades. The overall land area of the WUI grew by 31% from 1990 to 2020.[6] During that same period, the total number of homes in the WUI increased by 47%.[7] There are currently more than forty-four million homes in the WUI, amounting to 32% of all housing in the United States.[8] Expansion of the forested WUI, and the housing units within the forested WUI, has generally mirrored the trends for the entire WUI.[9]

The frequency and scale of wildfires in the WUI increased steadily over the last several years.[10] More than 55,000 houses burned due to wildland fires from 2010 to 2022, and most of these houses were in the WUI.[11] The increase in fire activity affected all vegetation types within the WUI: forestland, grassland, and shrubland.[12] During the period from 1990 to 2020, fires on grassland and shrubland destroyed a higher number of homes than did fires

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[6] *Understanding the Wildland-Urban Interface (1990-2020) StoryMap*, U.S. DEP'T OF AGRIC., FOREST SERV. N. RSCH. STATION (Sept. 19, 2023), https://www.fs.usda.gov/research/nrs/products/dataandtools/interactivemaps/understanding-wildland-urban-interface-1990-2020-storymap .

[7] *Id.*

[8] *Id.*

[9] *See* Radeloff et al., *supra* note 1, at 704–06 (indicating that both the WUI and the total amount of housing units within the WUI have grown in states where the forested WUI predominates, and in states where the WUI primarily consists of other vegetation types).

[10] *See id.* at 702, 705 (noting that, over time, the WUI has experienced "rapid increases . . . in the area that burns annually" and that since the 1990s, the area burned in the WUI per decade has increased by 240%); *id.* at 703 (concluding also that "[b]oth burned area and the number of homes within wildfire perimeters have increased markedly since 1990").

[11] *Id.* at 702; *see also id.* at 706 (concluding, based on detailed analysis of nationwide data, that "homeowners and communities in the WUI have experienced wildfires more frequently in recent years").

[12] *Id.* at 702.

on forestland, especially in the Western United States,[13] but a fire on forestland was more likely to destroy a house than was a fire on grassland or shrubland.[14] Throughout the entire WUI, most fires are ignited as a result of human activity.[15]

Some commentators believe that the time has come to reduce the human presence in the forested WUI. One category of proposals would change state laws or local ordinances to prohibit residential construction in the forested WUI.[16] Some authors seem to suggest

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[13] *See id.* at 702–03 ("[B]ecause the total area of grassland and shrubland fires is much larger than that of forest fires, 63.7% of houses destroyed in wildfires . . . were located in grasslands and shrublands, compared with only 33.1% in forests.").

[14] *See id.* (noting that wildfires on grassland and shrubland destroyed more houses overall, but wildfires on forestland destroyed a higher percentage of houses within the burn perimeters).

[15] Joseph Serna, Rong-Gong Lin II & James F. Peltz, *How Do Wildfires Start and Spread?*, L.A. TIMES (Oct. 29, 2019, 3:58 PM), https://www.latimes.com/california/story/2019-10-29/how-do-wildfires-start [https://perma.cc/K8SP-M634] ("A study published in 2017 found that 84% of U.S. wildfires were caused by human-related activity . . . . About 95% of the fires the California Department of Forestry and Fire Protection responds to are caused by humans.").

[16] *See* Emily Schlickman, Brett Milligan & Stephen M. Wheeler, *A Case for Retreat in the Age of Fire*, U.C. DAVIS BLOG (July 25, 2022), https://www.ucdavis.edu/blog/case-retreat-age-fire [https://perma.cc/F39S-79U2] (discussing the potential benefits of "construction-halting measures, which prevent new construction to manage growth in high-risk parts of the wildland-urban interface" that include changes to "county and city general plans and zoning"); AM. ACAD. OF ACTUARIES, LESSONS LEARNED FROM THE 2017 TO 2021 EVENTS, at 8 (2022), https://www.actuary.org/sites/default/files/2022-02/Wildfire.2022_.pdf [https://perma.cc/8MU7-CSQS] ("In some respect, the simplest solution to the problem of wildfires threatening life and property in WUIs would be the prohibition of development in WUIs."); Tyler O'Connell, *Prohibition Over Prevention: How California's Land Development Ban Will Hinder Solutions to the Wildfire Crisis*, 52 U. PAC. L. REV. 343, 354–56 (2021) (discussing California Senate Bill 474, which would have banned all development including residential construction and renovation in certain areas of the WUI); Taxpayers for Common Sense, Comment Letter on Notice of Request for Public Comment on the Executive Order on Tackling the Climate Crisis at Home and Abroad, 86 Fed. Reg. 14403 (Mar. 16, 2021) (quoting Joshua Sewell, senior policy analyst, who recommended that agencies should "create coordinated policies that limit or prohibit new development along the Wilderness Urban Interface"); Kate Lucky, *The West Coast Wildfires: A New Fact of Life*, COMMONWEAL (Sept. 16, 2020), https://www.commonwealmagazine.org/new-fact-life [https://perma.cc/BF3L-N9EA] ("We can ban building in wildland-urban interfaces . . . ."); 1000 FRIENDS OF OR., A NEW VISION FOR WILDFIRE PLANNING: A REPORT ON LAND USE AND WILDFIRES 2 (2019), https://friends.org/WildfireReport [https://perma.cc/MZ7N-FKHF] (advocating to "keep development out of high-risk areas, such as forests . . . and the wildland-urban interface"); Eric Biber & Moira O'Neill, *Building to Burn? Permitting Exurban Housing Development in*

that insurance retreat—the refusal of private insurance carriers to write policies for homeowners—would be a salutary development for the forested WUI, and the government should not intervene to protect homeowners from these market forces.[17] Some authors have

High Fire Hazard Zones, 48 ECOLOGY L.Q. 943, 954 (2021) ("Theoretically, local governments could manage the problem by severely restricting development in the WUI through local planning and zoning law."); Christopher C. French, *America on Fire: Climate Change, Wildfires & Insuring Natural Catastrophes*, 54 U.C. DAVIS L. REV. 817, 844 (2020) (indicating that one way to address wildfire risk would be for state laws or local zoning ordinances to "reduce the number of homes being built in the WUI" or "prohibit people from building homes in areas at high risk for wildfires"); Grace Gedye, *What California Can Do as Home Insurance Companies Retreat in Face of Mounting Climate Change Risks*, KQED (June 18, 2023), https://www.kqed.org/news/11953252/what-california-can-do-as-home-insurance-companies-retreat-in-face-of-mounting-climate-change-risks [https://perma.cc/UN86-LLQA] (citing Alice Hill, a senior fellow for energy and the environment at the Council for Foreign Relations, who suggested the prevention of homebuilding in certain areas); Susan Wood, *New California Laws Build on Research into Wildfire-Resistant Construction*, N. BAY BUS. J. (Oct. 12, 2020), https://www.northbaybusinessjournal.com/article/industrynews/new-california-laws-build-on-research-into-wildfire-resistant-construction/ [https://perma.cc/6Y8E-7HMJ] (citing Cal Fire Chief Steven Hawks' prediction that "California may have to make the tough decision to ban where houses and businesses can be built—especially in the WUI").

[17] For example, Lisa Dale at the Columbia Climate School has mentioned the signaling value of an insurance pullout, suggesting that it could be "game-changing" because it could move people away from "high-risk areas and toward safer terrain," so perhaps some might regard this development as a cause to "celebrate." *See* Sarah Fecht, *State Farm's California Pullout: What It Means for Climate Adaptation and Communities*, COLUM. CLIMATE SCH.: STATE OF THE PLANET (June 7, 2023), https://news.climate.columbia.edu/2023/06/07/state-farms-california-pullout-what-it-means-for-climate-adaptation-and-communities [https://perma.cc/63BS-Y5N6] (noting that Dale also raised concerns about the potential harm to low income households, so she is not sure that an insurance pullout should warrant celebration). According to Deborah Sivas, who directs the Stanford Environmental Law Clinic, the "long[]-term solution [to wildland fire] is to move—and keep—people out of harm's way [and t]he market could help drive this solution as fire insurance becomes unavailable . . . ." Deborah Sivas, *Thinking Harder and Smarter About Wildland Fire,* REGUL. REV. (Nov. 16, 2020), https://www.theregreview.org/2020/11/16/sivas-thinking-harder-smarter-wildland-fire [https://perma.cc/W3YC-99FC]; *accord* Schlickman, Milligan & Wheeler, *supra* note 16 ("Removing government-backed fire insurance plans or instituting variable fire insurance rates based on risk could also encourage people to avoid high-risk areas."); *cf.* J.B. Ruhl & Robin Kundis Craig, *4°C*, 106 MINN. L. REV. 191, 256–58 (2021) (suggesting that "the more important adaptation role for private insurance companies, however, is as market signalers of when in situ adaptation is becoming too expensive"; arguing that government intervention in insurance markets may be undesirable because it weakens this signal, but perhaps the government should offer to buy the homes of certain forestland owners who can no longer obtain insurance).

gone so far as to urge the preemptive relocation of human populations from the forested WUI to less fire-prone areas.[18]

None of the above-listed strategies appear to be viable in the present political climate. States are unlikely to adopt blanket prohibitions of construction in the WUI, in part because land use approvals traditionally occur at the local level.[19] Counties and cities are reluctant to ban development in the WUI because local governments face pressure to make affordable land available, and because these governments derive permit fees and tax revenue from new construction.[20] Similarly, there is little political will to allow

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[18] *See* Katharine J. Mach & A.R. Siders, *Is Your Town Threatened by Floods or Fires? Consider a 'Managed Retreat.'*, N.Y. TIMES (July 16, 2021), https://www.nytimes.com/2021/07/16/opinion/managed-retreat-climate-change.html (advocating a preemptive relocation of residential populations threatened by fire); Schlickman, Milligan & Wheeler, *supra* note 16 ("[W]hile the notion of wildfire retreat is controversial, . . . as experts in urban planning and environmental design, we believe the necessity for [wildfire] retreat will become increasingly unavoidable."); MacKenzie Thurman, Note, *Fighting Fire with Fire-Hardened Homes: The Role of Electric Utilities in Residential Wildfire Mitigation*, 122 COLUM. L. REV. 1055, 1079 n.130 (2022) ("Managed retreat, akin to floodplain management policies, may still be the best solution in areas that present too high of a fire risk . . . .").

[19] *See* O'Connell, *supra* note 16, at 345–46 (explaining that the California legislature did not pass Senate Bill 474, which would have prohibited construction in many areas of the WUI, in part because "the ban reached too far into local government's zone of responsibility"); Craig Miller, *When It Comes to Wildfire Solutions, Relocating Communities Is a Tough Sell*, KQED (Aug. 5, 2019), https://www.kqed.org/science/1945874/when-it-comes-to-wildfire-solutions-relocating-communities-is-a-tough-sell (quoting Lisa Dale and stating that because local governments bear the costs of land use decisions they are "the key", and that state officials "can only take limited steps", despite having broad authority to "force local governments to act"); CAL. GOV'T CODE § 65850 (West 2024) (granting authority to counties and cities to enact laws governing land use); *Planning and Land Use*, GA. MUN. ASS'N (Feb. 22, 2018), https://www.gacities.com/Resources/GMA-Handbooks-Publications/Handbook-for-Georgia-Mayors-and-Councilmembers/Part-Three-MANAGEMENT-of-MUNICIPAL-GOVERNMENT/Planning-and-Land-Use.aspx [https://perma.cc/2LJX-6Y7N] ("Due to Georgia's status as a Home Rule state, the local level of government makes all land use decisions.").

[20] *See* Miller, *supra* note 19 ("[Local officials] run up against problems like, 'If we close the wildland-urban interface from building, we've just reduced our tax base. We've just reduced the availability of private property in our town.' And no local government wants to do that."); Kate Anderson, *The Best Wildfire Solution We're Not Using*, SIGHTLINE INST. (June 1, 2023, 7:00 AM), https://www.sightline.org/2023/06/01/the-best-wildfire-solution-were-not-using/ [https://perma.cc/X6WF-Q5E6] ("Local and state governments . . . benefit from the tax revenues and economic growth that development brings . . . ."); French, *supra* note 16, at 844 (indicating that eliminating or reducing construction in the WUI might not be "politically

insurance retreat in the WUI.[21] The most unrealistic proposal would be to relocate large groups of WUI residents to other areas[22]: this proposal would need to overcome the impediments of strong public opposition[23] and inadequate governmental infrastructure to plan and facilitate such relocation.[24]

Even if the above-listed strategies were politically viable, I would oppose them from a policy standpoint, at least as near-term measures to address fire risk in the forested WUI. I should make clear, though, that I do not support unfettered development in the forested WUI. I agree with the critics that dense subdivisions do not

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feasible due to the high cost of property in urban areas and the highly valued principle of individual freedom of choice regarding where to live"); Bill Gabbert, *Should Homes Be Banned in Fire-Prone Areas?*, WILDFIRE TODAY (Dec. 28, 2018), https://wildfiretoday.com/2018/12/28/should-homes-be-banned-in-fire-prone-areas/ [https://perma.cc/BS6C-DNLV] ("Cities, counties, and planning boards (where they exist) are often under pressure to approve new housing developments. They want to expand their tax base."); *cf.* Molly Peterson, *One Potential Solution to Deadly Fires in the Wilderness: Don't Build There*, KQED (June 12, 2019), https://www.kqed.org/science/1943266/one-potential-solution-to-fires-in-the-wilderness-dont-build-there [https://perma.cc/XNE9-XP55] ("Politicians would have to act if counties are to set limits on where developers build . . . . But elected officials are rarely caught talking about such limits . . . .").

[21] *See* Ruhl & Craig, *supra* note 17, at 257 ("Private insurance market signals will be most effective, however, if federal and state governments do not intervene. Unfortunately, evidence to date indicates that politics will produce exactly the opposite result."); *see also* Sivas, *supra* note 17 ("[A]s a society, the United States has a history of bailing out those on the losing end of these market forces. When private insurers decline to renew earthquake or flood policies in high-risk areas, the federal government or states often step into the breach with public safety net programs.").

[22] *See* Miller, *supra* note 19 (dismissing the proposal to relocate entire communities from the WUI because the prospect of displacing half the population of the Western United States is not "realistic").

[23] *See* Schlickman, Milligan & Wheeler, *supra* note 16 (conceding that "the notion of wildfire retreat is controversial, politically fraught and not yet endorsed by the general public"); *see also* Ruhl & Craig, *supra* note 17, at 237–38 ("'[P]re-emptive' retreat—retreat forced and managed in *anticipation* of conditions that will eventually exceed the capacity of resistance and resilience strategies—has not yet been widely implemented anywhere in the United States and surely would face stiff pushback from many interests, not just the people being relocated. There is a long history of forced relocations in the United States and elsewhere, and they have almost always been controversial." (footnotes omitted)).

[24] *See* Katharine J. Mach & A.R. Siders, *Reframing Strategic, Managed Retreat for Transformative Climate Adaptation*, 372 SCIENCE 1294, 1296 (2021) ("In practice, achieving strategic retreat has been very difficult. Most managed retreat programs have lacked a holistic plan, and retreat efforts with strategic plans have been stymied by systemic implementation barriers and siloed governance systems." (endnotes omitted)).

belong in this zone.[25] I agree that development should be off-limits in certain areas of the forested WUI that are especially sensitive or historically fire-prone.[26] In fact, I believe that only a fraction of current construction should continue in the forested WUI. For example, Oregon's land use law permits homebuilding on an eighty-acre parcel in the forested WUI, subject to siting standards that minimize fire risk and preserve forest uses, so long as the parcel lies within the requisite distance from a minimum number of other parcels that had residences in 1993.[27] Development that meets such strict requirements entails tolerable risk and may offer the best hope of maintaining healthy forests in the WUI.[28] I also believe that renovation or replacement of existing structures should be permissible if the new construction complies with the latest building codes. However, I also believe—and argue in this Article—that across-the-board construction moratoria, withdrawal of insurance, or wholesale relocation of rural residential populations would cause undue hardship and would hinder the ostensible goals of their proponents.[29]

There are several compelling reasons to oppose laws seeking to reduce the human presence in the forested WUI. Each of these reasons requires separate discussion. For ease of reference, I will

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[25] *See, e.g.*, Gabbert, *supra* note 20 (describing how "a burning ember that may have traveled a quarter of a mile" may destroy an entire neighborhood or city when homes are built too close together in fire prone areas).

[26] *See* Schlickman, Milligan & Wheeler, *supra* note 16 (discussing "construction-halting measures, which prevent new construction to manage growth in high-risk parts of the wildland-urban interface").

[27] *See* OR. REV. STAT. § 215.780(1)(c) (2023) (setting 80-acre minimum parcel size for forestland); *id.* § 215.750 (requiring that new dwellings be built in certain proximity to parcels that had dwellings in 1993, thereby limiting the parcels on which dwellings may be built); *id.* § 217.730(1)(b) (providing fire prevention standards for dwellings on forestland including the requirement that each dwelling have access to firefighting services and utilize a "fire retardant roof"); OR. ADMIN. R. 660-006-0027 (2020) (setting forth requirements for building residences on forestland); *see also* Laura Oppenheimer, *Conservationists Vie with Developers to Snap Up Forests for Sale*, SEATTLE TIMES (Jan. 13, 2007, 12:00 AM), https://www.seattletimes.com/business/real-estate/conservationists-vie-with-developers-to-snap-up-forests-for-sale/ [https://perma.cc/K24B-UQ7V] ("Oregon prevents forest owners from creating lots smaller than 80 acres and sets a high bar for rezoning land.").

[28] *See infra* section I.C.

[29] *See infra* sections I.B, I.E (discussing construction moratoria, insurance retreat, and relocation).

use the term "drastic measures" as a shorthand for the three proposals identified earlier in this section: construction moratoria, insurance retreat without government intervention, and relocation of residential populations.

A. DRASTIC MEASURES WOULD NOT REDUCE FIRE RISK SIGNIFICANTLY

Policymakers should not underestimate the stubbornness of people who want to live in the forested WUI. Current residents do not wish to move from this region even after large-scale wildfires,[30] and in-migration to the forested WUI continues despite the well-publicized fire risks.[31] Experience has shown that the loss of insurance does not necessarily drive off homeowners from a high-risk area.[32] Assuming the government was willing to offer relocation incentives, the high cost and limited availability of alternate housing in the Western United States might make the incentives unappealing.[33] In any event, the 44 million houses in the WUI are

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[30] *See* Miller, *supra* note 19 (noting that, "for a long time across the West," people have moved back to areas that experienced wildfires).

[31] Mahalia B. Clark, Ephraim Nkonya & Gillian L. Galford, *Flocking to Fire: How Climate and Natural Hazards Shape Human Migration Across the United States*, 4 FRONTIERS HUM. DYNAMICS 1, 1 (2022) (finding, based on analysis of migration patterns within U.S. over period from 2010 to 2020, that people were moving "toward areas most affected by wildfires" and that these data "suggest that, for many, the dangers of wildfires do not yet outweigh the perceived benefits of life in fire-prone areas").

[32] *See* Robert Gebelhoff, *As Home Insurance Premiums Spike, Governments Must Act*, WASH. POST (Sept. 6, 2023, 6:30 AM), https://www.washingtonpost.com/opinions/2023/09/06/climate-change-hurricane-florida-home-insurance-premiums/ ("Market forces don't seem to persuade many people to move out of risky locations. As Florida shows, many instead give up on insurance altogether. Already, the percentage of homeowners without coverage is surging. It is at 12 percent today compared with just 5 percent in 2016, the Insurance Information Institute reports. That's good for no one; if a disaster hits these homes, lack of coverage would severely slow down recovery.").

[33] *See* Crescencio Rodriguez-Delgado, *California's 'Climate Migrants' and the Difficulty of Finding a New Home*, PBS NEWS HOUR (Aug. 25, 2022, 1:48 PM), https://www.pbs.org/newshour/nation/as-fires-rip-through-california-and-the-west-some-find-it-hard-to-stay-in-their-communities# (reporting that if residents of a wildfire area do want to consider moving away, they must contend with "a housing shortage brought on by a historical lack of homebuilding and affordability concerns that aren't meeting needs across the state"); Miller, *supra* note 19 ("Remember, half the residents of the American West live in the wildland-urban interface. It's hard to imagine asking 50% of western residents to move

not going anywhere,[34] and they would pose an even greater fire risk if construction moratoria extended to replacement or substantial modification of existing structures.[35] Even if WUI residents abandoned their homes, or if they declined to build on parcels that could have been developed before the ban, the vacant land would present more of a wildfire risk.[36] One final consideration worth noting is that evacuation of the forested WUI would do nothing to address the significant fire threat posed by WUI lands consisting of grassland and shrubland;[37] in fact, the movement of populations from the forested WUI might increase residences in these other areas.

B. DRASTIC MEASURES WOULD DISPROPORTIONATELY HURT LOW-INCOME AND MINORITY RESIDENTS OF THE WUI

Principles of environmental justice counsel against draconian measures that seek to make living in the WUI untenable. Low-income and minority residents make up a higher proportion of the population in fire-prone WUI communities than in the United

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to the city. We're asking for complete and total urbanization of the West if we want to retreat from wildfire zones. And that's not what the West is about, and that's not why people live there. So I don't think it's realistic.").

[34] *See* Radeloff et al., *supra* note 1, at 706 ("Irrespective of how much the total WUI grows in the future, the 44.1 million houses in the total WUI in 2020 mean that WUI wildfires will remain a major problem.").

[35] *See* O'Connell, *supra* note 16, at 353–56, 363, 363 n.203 (observing that a California bill seeking to ban WUI construction would have applied to replacements and renovations, leaving "existing homeowners in harm's way, potentially unable to update their homes with firesafe materials" and that such measures "exacerbate the wildfire crisis by leaving outdated, high fire risk homes unaddressed").

[36] *See id.* at 363 ("[T]his development ban would have disincentivized landowner presence on vacant WUI parcels—reducing vegetation removal and other fire prevention efforts—allowing for unmitigated, dangerous vegetation growth. These unintended effects would have left large sectors of the state dormant, significantly increasing fire-risk to neighboring properties containing homes and other structures." (emphasis omitted) (footnote omitted)); *see also id.* at 356–61 (pointing out that with no economically viable use for WUI parcels, landowners will be less inclined to maintain them).

[37] *See* Radeloff et al., *supra* note 1, at 702–03 (reporting that wildfires on WUI areas consisting of grassland and shrubland destroyed a significantly higher number of residences from 1990 to 2020 than did wildfires in the forested WUI, especially in the West).

States overall, and that proportion will increase in the future.[38] These same low-income and minority residents are the most likely to live in houses built with materials that are vulnerable to fire, so construction moratoria that foreclose replacement and renovation would harm these residents the most.[39] Commentators who want the private insurance market to fail in the WUI, and who want the government to allow that failure, need to bear in mind that low-income and minority residents would bear the greatest hardship.[40] Similarly, the relocation of WUI communities may place more burdens on low-income and minority residents than on the wealthy.[41] Indeed, it is possible that measures to divert population

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[38] *See* Matthew Robert Auer & Benjamin Evan Hexamer, *Income and Insurability as Factors in Wildfire Risk*, 13 FORESTS 1130, 1133 (2022) (presenting data showing that 60% of the ninety-eight counties most at risk for wildfire have poverty rates above the national average); *see also, e.g.*, French, *supra* note 16, at 864 (observing that in Paradise, California, the site of a wildfire that killed eighty-five people, the average income was $26,000, and the mean home price prior to the fire was $232,000); Jon Muyskens, Andrew Ba Tran, Naema Ahmed & Anna Phillips, *1 in 6 Americans Live in Areas with Significant Wildfire Risk*, WASH. POST (May 17, 2022), https://www.washingtonpost.com/climate-environment/interactive/2022/wildfire-risk-map-us/ ("[M]inorities face a disproportionate risk . . . . By 2052, about 44 percent of all Native Americans will live in areas with significant probability of wildfire. Nearly 1 in every 4 Hispanic people will be living in similar communities.").

[39] *See* O'Connell, *supra* note 16, at 355, 364 (criticizing a California bill that sought to prohibit any homebuilding in the WUI, including "a[] property owner may seek to replace the roof or walls of a home with firesafe components" and noting further that the bill "would have had a disproportionate effect on lower wealth regions of California"); Thurman, *supra* note 18, at 1055 ("In the Wildland-Urban Interface [many] homes in low-income communities are built with flammable material, which accelerates the intensity and spread of wildfires."); French, *supra* note 16, at 862 (indicating that "poorer people tend to live in areas more prone to natural catastrophes and their homes are not built as well to withstand damage").

[40] *See* Auer & Hexamer, *supra* note 38, at 1, 8 (noting that loss of insurance due to wildfire risk is more burdensome for low-income households); Fecht, *supra* note 17 (cautioning that insurance withdrawal "leaves lower income households unprotected").

[41] *See* A.R. Siders & Idowu Ajibade, *Introduction: Managed Retreat and Environmental Justice in a Changing Climate*, 11 J. ENV'T STUD. & SCIS. 287, 288 (2021) ("Managed retreat is a highly controversial adaptation strategy in part because it has potential for abuse by governments and corporations seeking to displace disenfranchised populations and because it may, intentionally or unintentionally, perpetuate or exacerbate colonialist power dynamics and racial discrimination" (citations omitted)); Talia Shadroui, *Environmental Justice Considerations in Managed Retreat*, ENV'T L. INST. (Nov. 2, 2022), https://www.eli.org/vibrant-environment-blog/environmental-justice-considerations-managed-retreat ("Managed retreat has the potential for abuse and displacement of

from the WUI might transform these areas into the exclusive domain of affluent, white homeowners who would be more likely to live in fire-hardened houses, who would be able to afford higher insurance premiums,[42] and who could easily live elsewhere during "red flag" periods.[43]

C. DRASTIC MEASURES WOULD NOT BRING BACK LARGE-SCALE OWNERSHIP OF FORESTLAND IN THE WUI

Commentators who seek to drive small-scale private landowners from the forested WUI seem to assume that larger owners would take their place and manage the forests more responsibly.[44] This assumption is mistaken. For instance, the government only holds a small portion of WUI forestland[45] and is in no position to acquire more because the budgets of public agencies are already insufficient for adequate forest management and firefighting.[46] Industrial

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marginalized communities . . . ."); Mach & Siders, *supra* note 24, at 3 ("[P]erhaps more than any adaptation strategy, retreat has generated debate and discord related to equity . . . .").

[42] *See* Fecht, *supra* note 17 ("Environmental justice concerns arise if insurance rates increase overall as a result of [insurance retreat], making life in the mountains only available to the wealthy. . . .").

[43] *See* Anderson, *supra* note 20 ("About 15 percent of WUI houses are second homes."). "Red flag warnings are issued when forecasts indicate that a combination of high temperatures, very low humidity and strong winds in a given location could create an environment that is conducive to dangerous fires." Emily Mae Czachor, *What Is a Red Flag Warning and What Areas Are at Risk*, CBS NEWS (Apr. 13, 2023, 12:50 PM), https://www.cbsnews.com/news/red-flag-warning-fire-weather-meaning/ [https://perma.cc/DVJ6-Y8RP].

[44] *See* Oregonian Editorial Board, *The Northwest Discovers that the Once-Scorned Timber Industry Is Better than the Alternative: Rural Subdivisions*, OREGON LIVE (Jan. 1, 2010), https://www.oregonlive.com/opinion/2010/01/the_northwest_discovers_that_t.html [https://perma.cc/X5VR-X86J] (highlighting the irony that many in the Northwest would prefer that the once-vilified timber industry take over forestland from homeowners).

[45] Nancy F. Sonti, Rachel Riemann, Miranda H. Mockrin & Grant M. Domke, *Expanding Wildland-Urban Interface Alters Forest Structure and Landscape Context in the Northern United States*, 18 ENV'T RSCH. LETTERS 014010, Dec. 19, 2022, at 5–7 (finding that in a 24-state region of the Northern United States, the federal and state governments owned 2% and 3% of the land area of the forested WUI, respectively).

[46] Anna Phillips, *As Wildfires Explode in the West, Forest Service Can't Afford Prevention Efforts*, L.A. TIMES (Oct. 21, 2020, 7:29 AM), https://www.latimes.com/politics/story/2020-10-21/amid-worsening-wildfires-the-forest-service-is-short-of-funds-and-delaying-fire-prevention-work [https://perma.cc/AL9C-BGVV] (reporting that the United States Forest Service lacks "adequate funding to clear dead trees and brush from federal owned land," so millions of acres in federal forestland are at risk of wildfire).

forestry companies are withdrawing from many areas of the West[47] due in part to financial losses[48] attributable to wildfire, drought, and sun scorch, which are severely constraining the production of commercially viable tree species.[49] In addition, industrial forestry companies are wary of the WUI[50] because they sometimes face opposition to their usual techniques in this zone, such as clear-cut harvesting, burning of slash, and aerial application of broadleaf herbicides.[51] Even if the big timber companies were amenable to buying land in the WUI, they would have trouble aggregating

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[47] *See, e.g.*, Amy Hsuan, *When the Land's Worth More than the Trees*, OREGON LIVE, (Dec. 27, 2009, 1:00 AM), https://www.oregonlive.com/business/2009/12/when_the_lands_worth_more_than.html [https://perma.cc/28TM-7LBU] (pointing out that "the bulky timber giants found themselves losing ground to competitors from Argentina to New Zealand . . . [and in Oregon,] timberland owners such as Boise Cascade and Georgia Pacific sold all their land[—]hundreds of thousands of acres"); Oregonian Editorial Board, *supra* note 44 (mentioning that forest products companies have been selling off "millions of acres of private forest across the Northwest").

[48] *See* Yuhan Wang & David J. Lewis, *Wildfires and Climate Change Have Lowered the Economic Value of Western U.S. Forests by Altering Risk Expectations*, 123 J. ENV'T ECON. & MGMT. 102894, Jan. 2024, at 2 ("[T]he increases in climate-induced drought stress and large wildfire events over the past two decades have led to a roughly 10% loss in timberland value per acreage on average, about $11.2 billion losses across [California, Oregon, and Washington].").

[49] *See generally* C.J. Still et al., *Causes of Widespread Foliar Damage from the June 2021 Pacific Northwest Heat Dome: More Heat than Drought*, 43 TREE PHYSIOLOGY 203, 203–08 (2023) (sharing research results indicating that sun scorch, rather than drought, is responsible for a substantial percentage of recent tree mortality in the Northwest, because trees cannot survive when the heat exceeds their thermal tolerance); *see also* Nathan Gilles, *Climate Change Is Hastening the Demise of Pacific Northwest Forests*, AP NEWS (Nov. 26, 2023), https://apnews.com/article/trees-climate-environment-pacific-northwest-iconic-cedars-d1f58b79c5c92376f4fe835f6b433602 [https://perma.cc/5RD8-G39Z] ("In recent years, at least 15 native Pacific Northwest tree species have experienced growth declines and die-offs, 10 of which have been linked to drought and warming temperatures, according to recent studies and reports . . . . 'Firmageddon' refers to the more than 1,875 square-mile (4,856-square-kilometer) die-off of five fir species in Oregon, Washington and northern California. . . . Scientists have also observed a similar pattern for Douglas fir, the region's leading commercial timber species").

[50] *See* Oppenheimer, *supra* note 27 (indicating that timber companies have begun to move away from more populous forested areas and "reinvest in more remote forests").

[51] *See, e.g.,* Elon Glucklich, *Rural Lane County Residents Fight Aerial Herbicide Spraying*, STATESMAN J. (Feb. 12, 2018, 9:55 AM), https://www.statesmanjournal.com/story/tech/science/environment/2018/02/12/rural-lane-county-residents-fight-aerial-herbicide-spraying/329746002/ (discussing the opposition of rural residential communities to the aerial application of herbicides by timber companies).

parcels into large holdings that are necessary to achieve economies of scale.[52] For all these various reasons, it seems unlikely that either the government or the industrial forestry companies will take over the WUI forestland that would become available if homeowners left this zone.

D. DRASTIC MEASURES WOULD THWART THE STEWARDSHIP OF FAMILY FORESTLAND OWNERS

Given the reality that large-scale ownerships are unlikely to return to the WUI, family forestland owners offer the best hope for preserving WUI forests. Forestry in a time of drought is very labor-intensive, requiring frequent thinning, brush-clearing, fuel reduction, insect control, planting of drought-hardy species, road maintenance, and exclusion of trespassers whose activities could ignite wildfires.[53] Family forestland owners are uniquely able and willing to perform these tasks.[54] Indeed, most of them live on forestland precisely because they want to do such work.[55] The

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[52] The variable willingness of homeowners to sell would hinder aggregation, as would the high cost of residential lots compared to vacant timberland. *See* Hsuan, *supra* note 47 ("The going price for property at timber value in Oregon is $2,000 to $4,000 an acre. If it's sold as a home site, it's worth $30,000 an acre.").

[53] *See, e.g.*, MAX BENNETT ET AL., PAC. NW. EXTENSION, PNW 618, REDUCING FIRE RISK ON YOUR FOREST PROPERTY 6, 7, 17, 20 (2010), https://extension.oregonstate.edu/sites/default/files/documents/pnw618.pdf [https://perma.cc/2WPB-SLFN] (describing the myriad steps forested-property owners must take to protect from wildfires); FOREST SERV., U.S. DEP'T OF AGRIC., EFFECTS OF DROUGHT ON FORESTS AND RANGELANDS IN THE UNITED STATES: TRANSLATING SCIENCE INTO MANAGEMENT RESPONSES 2, 60 (James M. Vose, David L. Peterson, Charles H. Luce & Toral Patel-Weynand eds., 2019), https://www.fs.usda.gov/research/publications/gtr/gtr_wo98.pdf [https://perma.cc/85NT-34UW] ("Other ways to increase resilience to drought are to promote species diversity, drought-tolerant species, and large scale diversity of structure in forest ecosystems.").

[54] *See Forest Facts: Oregon's Family-Owned Forests*, OR. DEP'T FORESTRY (Feb. 2015), https://www.oregon.gov/odf/Documents/aboutodf/SmallForestlandOwnersFactsheet.pdf [https://perma.cc/2TZ2-E8MH] ("Most family forestland owners undertake extensive improvements on their lands. They've planted seedlings, removed invasive species, improved streamside areas, enhanced wildlife habitat, logged and thinned trees, reduced fire hazards, maintained roads and written forest management plans to help them keep their properties healthy and sustainable.").

[55] *See id*. (discussing the work that forestland owners perform and noting that half of forestland owners "wouldn't sell their land for any reason").

diminished ability to grow commercially viable tree species is not daunting for the majority of family forestland owners who prioritize aesthetics, privacy, or environmental protection over profit-seeking.[56]

If the proponents of drastic measures made it impossible for family forestland owners to remain in the WUI , a genuine question would arise as to who would maintain healthy forests in the WUI. Vacant parcels, consisting of vulnerable stands beset with brush, dead trees, and insects, would present a greater fire risk than would family-owned forestland with managers residing on site.[57] Of

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[56] Steve McConnell, a regional extension specialist with the Washington State University Extension, explained the priorities of family forestland owners:

> Who are small forest landowners and what do they want? Small forest landowners own forestland for lots of reasons. Growing the most timber possible or making the most money possible are almost never among those reasons. According to a recent national survey, only a small segment (8 percent) of private, non-industrial forest landowners who collectively own 12 percent of family forest land is primarily concerned with productivity and profit. A much larger chunk, classed as "Woodland Retreat" owners and accounting for 40 percent of small forest landowners and 35 percent of family forest land, is primarily interested in the beauty and recreational values their land could provide. Another 30 percent of owners—the "Working the Land" owners holding 37 percent of total family forest land—are motivated by an ethic of respectful and judicious land use, and want to manage primarily to preserve the ecological health of their land along with retaining its financial value. Together these groups account for 70 percent of owners and 72 percent of the area managed by small forest landowners.

Steve McConnell, *Small Forest Landowners and the Four Letter "S" Word . . . .*, FOREST STEWARDSHIP NOTES (Oct. 20, 2014), https://foreststewardshipnotes.wordpress.com/2014/10/20/small-forest-landowners-and-the-four-letter-s-word/ [https://perma.cc/7CJW-8WW8]; *see also* Oppenheimer, *supra* note 27 ("When regular people move to the woods . . . 'it generally results in less timber production.'" (quoting Ted Lorensen, Or. Assistant State Forester)); *cf.* Tony Schick, Rob Davis & Lylla Younes, *Big Money Bought Oregon's Forests. Small Timber Communities Are Paying the Price.*, OR. PUB. BROADCASTING (June 11, 2020, 9:00 AM), https://www.opb.org/news/article/oregon-investigation-timber-logging-forests-policy-taxes-spotted-owl/ [https://perma.cc/8294-NCS8] ("Small timber owners . . . grow forests that are older and more biologically diverse than what corporate owners manage . . . .").

[57] *See* O'Connell, *supra* note 16, at 363 (explaining the dangers posed by vacant land in the WUI).

course, these managers have self-interested reasons to reduce fire risks and assist firefighting agencies.[58]

E. DRASTIC MEASURES WOULD CREATE INCENTIVES FOR LANDOWNERS TO ELIMINATE THEIR FORESTS

If new rules made forests a liability rather than an asset for landowners in the WUI, some of these owners might destroy all the forests on their parcels.[59] Just as the Endangered Species Act led some landowners to eliminate habitat altogether rather than deal with strict regulations of that habitat,[60] so too might owners of forestland convert it to alternate uses such as farming, ranching, or mining.[61] Such a loss of WUI forestland would be tremendously harmful. The preservation of forests is necessary to mitigate greenhouse gas emissions, and some evidence suggests that WUI forests can be particularly valuable for this purpose due to their

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[58] *See* Sophie Kassakove, *In California, a New Fight to Stop Building in the Path of Fire*, N.Y. TIMES (Jan. 26, 2022), https://www.nytimes.com/2022/01/26/us/wildfire-development-california-legal.html (noting that homeowners in the WUI "can provide firefighters with access roads and more eyes on the ground to help put out wildland blazes more quickly").

[59] *See* R.J. Lehmann, *How Do You Solve a Problem Like California?*, INS. J. (Sept. 23, 2022), https://www.insurancejournal.com/blogs/law-and-economics/2022/09/23/686531.htm ("[C]onsider what Jonathan Swift might call a modest proposal: wildfire risk could be eliminated if only you cut down all the trees.").

[60] *See* Jonathan H. Adler, *Tarnished Gold: The Endangered Species Act at 50*, 18 FIU L. REV. 385, 411 (2024) ("Several empirical studies confirm the negative effects of the [Endangered Species Act] on private land conservation [including] preemptive habitat destruction by forest landowners . . . ."); Jacob P. Byl, *Perverse Incentives and Safe Harbors in the Endangered Species Act: Evidence from Timber Harvests near Woodpeckers*, 157 ECOLOGICAL ECON. 100, 100 (2019) ("The Endangered Species Act creates perverse incentives for private landowners to destroy potential habitat in order to prevent endangered species from moving onto their properties."); Jeffrey A. Michael, *The Endangered Species and Private Landowner Incentives*, HUM. CONFLICTS WITH WILDLIFE: ECON. CONSIDERATIONS 29, 29 (2000) ("While intended to increase the habitat available to endangered species, the restrictions of the Endangered Species Act (ESA) increase the costs of harboring an endangered species to private landowners and create incentives for private landowners to reduce habitat.").

[61] GEORG KAPPEN ET AL., BOS. CONSULTING GRP., THE STAGGERING VALUE OF FORESTS–AND HOW TO SAVE THEM 11 (2020), https://www.bcg.com/publications/2020/the-staggering-value-of-forests-and-how-to-save-them [https://perma.cc/Q2XV-AHTJ] (analyzing reasons for "deforestation of 425 million hectares," and finding that "most significantly, forests are being removed so that land can be used for large-scale production of commodities, primarily through agriculture but also through mining").

proximity to emissions sources.[62] Deforestation exacerbates climate change,[63] and climate change increases the frequency and intensity of wildfires,[64] so proponents of new restrictions for the WUI should be aware that these well-intended restrictions could possibly prove counterproductive.

F. DRASTIC MEASURES MIGHT CONSTITUTE REGULATORY TAKINGS

The Takings Clause of the Fifth Amendment can apply to takings effected by land use regulations.[65] The Clause might not abide new laws or rules prohibiting development on privately owned land in the forested WUI.[66] Similarly, the preemptive relocation of communities from the forested WUI might run afoul of the Takings

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[62] Sarah Wilson, John-Rob Pool, Mack Phillips & Sadoff Alexander, *How Forests Near and Far Benefit People in Cities*, WORLD RES. INST. (Nov. 29, 2022), https://www.wri.org/insights/forests-benefit-cities [https://perma.cc/9YBC-WNNG] (indicating that forests near cities "are large reservoirs of carbon that are released if the forest is cleared or degraded[, but i]f forests are conserved, those stores are protected and forests continue to suck up more carbon over time, providing increased mitigation against climate change").

[63] *See* Marcelo Leon, Gino Cornejo, Micaela Calderón, Erika González-Carrión & Hector Florez, *Effect of Deforestation on Climate Change: A Co-Integration and Causality Approach with Time Series*, 14 SUSTAINABILITY 11303, Sept. 9, 2022, at 2 ("[F]orests have a double effect on the environment, especially on climate change. On the one hand, when trees are cut, they emit CO2 that affects the variability of climate change. Similarly, the existence of a greater number of forests on the planet helps mitigate climate change, because forests act as sinks for polluting gases.").

[64] *See* John T. Abatzoglou & A. Park Williams, *Impact of Anthropogenic Climate Change on Wildfire Across Western U.S. Forests*, 113 PROC. NAT'L ACAD. SCIENCES 11770, 11770 (2016) ("We demonstrate that human-caused climate change caused over half of the documented increases in fuel aridity since the 1970s and doubled the cumulative forest fire area since 1984.").

[65] *See* Emily Guimont, Comment, *Land Use Regulations, Climate Change, and Regulatory Takings*, 52 ENV'T L. 279, 282 (2022) ("Under the Takings Clause, governments, including local ones, may not take private property for a public purpose without paying just compensation . . . . [T]he definition of 'take' has evolved to include not only physical appropriations of or intrusions upon private land, but to also include regulations that burden private property."). For a summary of the various ways in which land use regulations addressing climate change might constitute regulatory takings, see *id.* at 288–305.

[66] *See* O'Connell, *supra* note 16, at 356–61 (arguing that California Senate Bill 474, which "would have imposed a ban on 'residential . . . , commercial, retail, [and] industrial use' [in certain WUI areas] due to the exigencies of wildfire," could have constituted a regulatory taking (first alteration in original) (quoting SB 474, 2019 Leg., Reg. Sess. (Cal. 2019))).

Clause if the government seeks to accomplish this relocation by deeming residential parcels uninhabitable.[67] Takings jurisprudence is unpredictable,[68] and some zoning restrictions withstand takings claims, but the Fifth Amendment might require compensation under various circumstances, e.g., if a zoning restriction would deprive the claimant's property of any economic value.[69] At the time this Article goes to press, the United States Supreme Court is considering a case that could bolster takings claims.[70] Some states also have laws that provide additional protection for landowners

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[67] A government declaration that a residential parcel is uninhabitable is arguably the same as a prohibition of any development there, so a regulatory taking might result. *See id.* at 357–59 (applying the *Penn Central* test to SB 474's prohibition on development and concluding that such a ban would likely be considered by courts to be a taking); *cf.* Richards v. Wash. Terminal Co., 233 U.S. 546, 556–57 (1914) (holding that a taking occurred where government construction of a railroad tunnel caused a property to become uninhabitable).

[68] *See* Nestor M. Davidson & Timothy M. Mulvaney, *Takings Localism*, 121 COLUM. L. REV. 215, 238 (2021) (discussing state statutes adopted to address concerns that takings cases were too "costly, time consuming, and unpredictable, and even where takings outcomes are predictable, those outcomes are unprincipled and insufficiently protective of property rights").

[69] *See* Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1006–07, 1030–32 (1992) (holding that a regulatory taking occurred when the South Carolina Legislature enacted the Beachfront Management Act, which included a building moratorium that essentially rendered petitioner's properties "valueless," and determining that the Takings Clause applies to a land use regulation that deprives a property owner of all economically beneficial use).

[70] On September 29, 2023, the United States Supreme Court agreed to review *Sheetz v. County of El Dorado*, a case in which a landowner challenged the constitutionality of what he considered to be an excessive fee to put a home on his land. The landowner claimed that this fee was a regulatory taking requiring compensation under the Fifth Amendment. *See* Sheetz v. County of El Dorado, 300 Cal. Rptr. 3d 308, 322–25 (Cal. Ct. App. 2022) (rejecting this claim), *cert. granted* 147 S. Ct. 477 (2023). The Court heard oral argument on January 9, 2024. *Sheetz v. County of El Dorado, California*, OYEZ, https://www.oyez.org/cases/2023/22-1074 (last visited Mar. 2, 2024). But the Court has not yet issued an opinion at the time of this Article's publication. According to Professor Richard Frank, director of the U.C. Davis School of Law's California Law & Environmental Policy Center, the *Sheetz* case presents an opportunity for the Court to provide a stronger basis for regulatory takings claims. *See* Richard Frank, *A(nother) California "Regulatory Takings" Case Heads to the Supreme Court*, LEGAL PLANET (Oct. 10, 2023), https://legal-planet.org/2023/10/10/another-california-regulatory-takings-case-heads-to-the-supreme-court/ [https://perma.cc/9TBL-AHGP] (opining that the "Court has moved steadily to the right when it comes to environmental regulations challenged as unconstitutional under the Takings Clause: the Court's conservative majority has proven itself extremely protective of private property rights and increasingly hostile towards environmental and land use regulatory programs").

against regulatory takings.[71] When a property owner proves that a regulatory taking has occurred, the government usually has two options: to forbear from enforcing the regulation at issue, or pay the claimant an amount equal to the diminution of value attributable to the regulation.[72] In the context of WUI regulations to address wildfire, the former option would undermine the efficacy of the regulations while the latter option would divert money that the government could otherwise have used for fire prevention and firefighting.

G. DRASTIC MEASURES COULD CAUSE A "RACE TO THE BOTTOM"

Congress has little role in land use reform, so it seems certain that land use policy will continue to vary from state to state.[73] If some states experiment with measures to move human communities out of the forested WUI, other states will likely take a different approach, and they might actually welcome new development diverted from those restrictive states. Thus, the foregone development in the restrictive states may simply shift to the relatively lenient states. After all, the political spectrum of

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[71] These laws are more common in the West than in the rest of the United States. *E.g.*, Oregon Ballot Measure 37 (2004) (codified at OR. REV. STAT. § 195.305 (2023)) (determining that Measure 37, which requires the government "to either compensate landowners for reductions of real property fair market value due to certain 'land use regulation[s]' or modify, remove, or not apply such regulations," survived various constitutional challenges (alteration in original)), *upheld by* MacPherson v. Dep't of Admin. Servs., 130 P.3d 308, 311, 322 (Or. 2006) (en banc); Arizona Proposition 207 (2006) (codified at ARIZ. REV. STAT. ANN. § 12-1134 (2024)) (concluding that Proposition 207, which "would require the state to pay just compensation to landowners for decreases in private property values caused by state land use laws," should be placed on the ballot despite a challenge under state constitutional provisions), *approved for ballot by* League of Ariz. Cities & Towns v. Brewer, 146 P.3d 58, 59, 63 (Ariz. 2006) (en banc).

[72] *See, e.g.*, *Macpherson*, 130 P.3d at 312 ("Measure 37 requires state and local governments to compensate private property owners . . . . As an alternative to the requirement of compensation, however, Measure 37 allows state and local governments to 'modify, remove or not . . . apply the land use regulation or land use regulations to allow the owner to use the property for a use permitted at the time the owner acquired the property.'" (citations omitted)).

[73] *The Basics of Land Use and Zoning Law*, TULANE UNIV. L. SCH. (Aug. 26, 2021), https://online.law.tulane.edu/blog/land-use-and-zoning-law [https://perma.cc/3NXE-2EMT] ("In regard to land-use restrictions and zoning law, the U.S. constitution grants limited powers to the federal government.").

forested states in the West runs from blue to red, and someone determined to build a forest home can find a hospitable location in which to do so.[74] States seeking to boost their tax revenue might see advantage in a "race to the bottom": the state with the fewest impediments to building in the forested WUI would draw the most in-migration of future forest dwellers.[75] If the total amount of homes in the United States' forested WUI did not decrease but simply moved to the states with the fewest restrictions, the result would be a net decrease in both fire safety and environmental protection.[76]

H. DRASTIC MEASURES FOR THE FORESTED WUI WOULD BE MYOPIC DUE TO THE UBIQUITY AND INELUCTABILITY OF CLIMATE IMPACTS

One fundamental problem with the relocation strategy is that no area of the United States will escape the ravages of climate change.[77] Rather than attempt to relocate populations from areas deemed too risky to areas deemed risk-free, the better approach would be to promote resiliency everywhere. Relocation from the forested WUI would necessitate a great deal of funding and political

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[74] *See* Brad Dress, *Here Are the 50 Legislatures Ranked from Most to Least Conservative*, HILL (Dec. 06, 2022, 11:11 AM), https://thehill.com/homenews/state-watch/3763498-here-are-the-50-legislatures-ranked-from-most-to-least-conservative/ [https://perma.cc/9ASZ-WJTX] (ranking the political composition of state legislatures and finding states in the West to be most and least conservative).

[75] James Chen, *What Is the Race to the Bottom*, INVESTOPEDIA (July 26, 2023), https://www.investopedia.com/terms/r/race-bottom.asp [https://perma.cc/U2MH-LPJX] ("The race to the bottom refers to a competitive situation where a company, state, or nation attempts to undercut the competition's prices by sacrificing quality standards or worker safety (often defying regulation), or reducing labor costs. A race to the bottom can also between governments to attract industry or tax revenues.").

[76] *See* Fecht, *supra* note 17 (raising concern that if insurance becomes unavailable in one state that homeowners may "choose to live in other, equally dangerous locations in neighboring states, creating an undesirable race-to-the-bottom across states seeking to attract new residents").

[77] For Professor Crystal Kolden's discussion on her Wildfire research, see Umair Irfan, *We Can't Just Run Away from Wildfires*, VOX (Sept. 24, 2021, 9:00 AM), https://www.vox.com/22677693/california-wildfires-2021-caldor-dixie-retreat-prescribed-burn [https://perma.cc/9V8D-BFHB] ("If people do decide to pull up stakes, they will have a hard time finding refuge: Just about every part of the US is going to face impacts from climate change, be it extreme rainfall, storm surges, or life-threatening heat. 'There is no place that has zero exposure to natural disasters . . . . '" (quoting Crystal Kolden)).

wrangling. The best use of this money and energy, at least in the immediate future, would be to improve the fire-hardiness of communities in their present locations.

III. CAN WE EMPOWER FAMILY FORESTLAND OWNERS TO REDUCE FIRE RISK?

The foregoing discussion has suggested that drastic measures would not work well as near-term solutions to wildfire risk in the forested WUI. Now I will address the potential utility of *in situ* adaptation. In particular, this Part discusses several categories of measures that would help family forestland owners to minimize fire risk. By empowering, rather than coercing or penalizing landowners, these measures are more likely to find support in rural communities and are more likely to be efficacious in reducing the threat of wildfire.

A. FAMILY FORESTLAND OWNERS NEED BETTER GUIDANCE ABOUT FIRE RISK

Every owner of forestland in the WUI needs to know about the urgency of creating defensible space around residences, updating building materials, landscaping appropriately, reducing fuel load in forests, minimizing insect blight, and where necessary, substituting more drought-resistant species of trees.[78] But unfortunately, many forestland owners are set in their ways, and this group includes a

[78] *See* Kimiko Barrett, *Reducing Wildfire Risk in the Wildland-Urban Interface: Policy, Trends, and Solutions*, 55 IDAHO L. REV. 3, 5–17 (2019) (discussing value of mitigation measures such as home-hardening, defensible space, landscape treatments, and vegetation control, and indicating "homeowner education programs are effective in raising awareness of wildfire risks and encourage homeowners to implement mitigation measures on their homes and properties"); Still et al., *supra* note 49, at 208 ("The likelihood that extreme heat led to widespread foliar scorch and other tree impacts, from this event, argues for a renewed emphasis on understanding heat tolerance and the underlying physiological and biophysical mechanisms leading to greater heat resilience in tree species."); Gilles, *supra* note 49 (explaining how drought and sun scorch are greatly hindering the growth of fir trees formerly considered to be the region's most commercially valuable); *see also* McConnell, *supra* note 56 (setting forth guidance concerning substitution of drought-resistant Ponderosa Pine for less drought- and fire-resistant fir).

substantial percentage of senior citizens.[79] County extension services need more funding for outreach so they can advise family forestland owners about fire risk. One recent development in Western states is that governments are producing wildfire hazard maps, supposedly with granular detail concerning hazardous conditions on particular parcels.[80] The basic idea of hazard mapping is a good one, but the execution can be problematic.[81] Agencies authoring the maps must identify what steps landowners can take to remediate the conditions and must revise the maps to reduce the hazard ratings when landowners have taken the prescribed steps. A danger exists that an unfavorable classification in a hazard map could deny landowners insurance coverage, building permits, or resale opportunities resulting from decreased value.[82] Those consequences would be unfair if the landowners remediated the hazards after they received notice in the first draft of the map. In sum, the government needs to have an ongoing conversation with landowners in the forested WUI by means of local extension foresters and constantly evolving hazard maps.

B. FAMILY FORESTLAND OWNERS NEED RESOURCES FOR RISK ABATEMENT

Agencies should provide grants so that landowners can fireproof their residences and hire crews to do thinning, brush removal, and fuel reduction.[83] Alternatively, agencies could reduce permitting

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[79] *See Forest Facts: Oregon's Family-Owned Forests*, *supra* note 54 (indicating that half of family forestland owners are senior citizens).

[80] *See, e.g.*, *Fire Hazard Severity Zone Maps*, CAL. DEP'T FORESTRY & FIRE PROT., https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones/fire-hazard-severity-zones-maps [https://perma.cc/A9YF-JU4J] (providing wildfire hazard maps on a statewide scale, as well as on the county level).

[81] *See* Rebecca K. Miller, Christopher B. Field & Katharine J. Mach, *Factors Influencing Adoption and Rejection of Fire Hazard Severity Zone Maps in California*, 50 INT'L. J. DISASTER RISK REDUCTION 101686, Nov. 2020, at 8 (discussing some communities' concerns that maps could affect "insurance rates and availability, and property values").

[82] *Id.* at 7.

[83] *See* Thurman, *supra* note 18, at 1076 (pointing out that in many "fire-prone areas" throughout the WUI, "low-income individuals . . . lack the resources to prepare or recover from fire" (internal quotation marks omitted)).

fees (which often run into the five figures)[84] to the extent that the permit seekers complete the hazard-reducing activity prescribed by the agencies. Ideally, agencies would hire their own specialists who could complete some of the work necessary for safeguarding residential properties. For example, if elderly property owners need help with fire-appropriate landscaping, removal of insect-blighted trees, or clearing defensible space, government employees should provide that assistance directly. Federal and state agencies should make resources available for fire prevention on private forestland properties in the WUI. Because federal and state agencies generally bear the costs of firefighting, they have a strong interest in subsidizing programs that reduce outlays for firefighting.[85]

C. FAMILY FORESTLAND OWNERS NEED REFORM OF LAND USE RULES AND THE PERMITTING PROCESS

Some rural neighborhoods have restrictive covenants specifying that homeowners must use certain building materials for aesthetic reasons, even if those materials lead to diminished fire safety.[86] To address this, states must pass laws overriding all such restrictive covenants so that homeowners can upgrade to the most fire-resistant materials.

Further, state and local governments need to revise their land use rules that determine when a dwelling is permissible on forestland. Now that Douglas Fir, historically the most valuable

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[84] *E.g.*, Sheetz v. County of El Dorado, 300 Cal. Rptr. 3d 308, 312 (Cal. Ct. App. 2022) (indicating, in a case now pending before the United States Supreme Court, that the permit fee for the placement of a small, manufactured home was over $23,000).

[85] *See* U.S. FOREST SERV., THE RISING COST OF WILDFIRE OPERATIONS: EFFECTS ON THE FOREST SERVICE'S NON-FIRE WORK 3 (2015), https://nwfsc.forestry.oregonstate.edu/sites/default/files/publications/RisingCostofWildfireOperationsFS-1.pdf [https://perma.cc/7LJD-ETH8] ("Wildland fire suppression activities are currently funded entirely within the U.S. Forest Service budget . . . ."); *Suppression Costs*, NAT'L INTERAGENCY FIRE CTR., https://www.nifc.gov/fire-information/statistics/suppression-costs [https://perma.cc/V3G8-9PJS] (listing the annual cost of firefighting to the federal government and indicating that, in 2022 alone, the federal government outlaid more than $3.5 billion in suppression costs).

[86] *See* Miller, *supra* note 19 (noting that for aesthetic reasons, some homeowner associations in the Western United States forbid the use of fire-resistant materials, and that such restrictions are "unexpected bottlenecks for progress").

tree species in the West,[87] is harder to grow due to drought,[88] the capacity of soil to grow Douglas Fir should no longer play such a central role in the review of applications for dwellings.[89]

The permitting process itself needs revision to incentivize ongoing fire-proofing of residences and the surrounding land. Instead of a single all-or-nothing review of code compliance—which risks the possibility of noncompliance once the inspector leaves—the agencies should use a multi-year inspection process that not only imposes lower burdens on landowners at each stage but ensures safety measures will remain in place over the long term. Perhaps permitting agencies could accelerate review of land use proposals by applicants who agree to undertake fire-proofing measures. Through these various reforms, the government and family forestland owners could advance their shared goals of improving the fire-hardiness of residences and nearby land.

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[87] *See* Gilles, *supra* note 49 (noting the Douglas Fir is the region's leading commercial timber species).

[88] *See* Still et al., *supra* note 49, at 204 (detailing how aerial detection surveys have documented the extensive impact of drought and sun scorch on Douglas Fir); *see also* Gilles, *supra* note 49 (explaining how drought has led to "Firmaggedon," a massive die-off of Douglas Fir and other fir species within a 1,875 square-mile area in the Pacific Northwest).

[89] *E.g.,* OR. ADMIN. R. 660-006-0027 (2020) (setting forth varying rules allowing for the construction of a dwelling on forestland depending on the capacity of land to grow commercial tree species). To evaluate proposals for dwellings, planning officials in Oregon consider soil maps that indicate the suitability of soil for growing Douglas Fir. These soil maps predate the worst years of drought, so their accuracy is questionable. *See* OR. DEP'T FORESTRY, LAND USE PLANNING NOTES (1998) ("Forest landowners who would like to demonstrate its forestland productivity . . . whether they wish to have it rezoned for development, want approval for template dwellings, or for another reason . . . must use established data sources to provide information on soils."); *see also* Brad Withrow-Robinson & Debra Zaveson, *Guide to Oregon County Survey Reports*, OR. STATE UNIV., https://smallfarms.oregonstate.edu/sites/agscid7/files/soil_survey_brochure.pdf [https://perma.cc/QTF8-8HDG] (explaining how inventories of the different kinds of soils in Oregon counties were made available starting in the 1970's to provide information on suitability for different uses).

D. FAMILY FORESTLAND OWNERS NEED THE GOVERNMENT TO REDUCE RESTRICTIONS ON FIRE-PROOFING ACTIVITIES

One significant impediment to fire safety is the movement to ban gas-powered chainsaws and brushcutters in Western states.[90] California has already enacted such a ban, and similar bills are pending in Oregon and Washington.[91] The rationale for the ban is to lower carbon emissions, reduce workers' inhalation of gas fumes, and reduce noise for neighbors.[92] These concerns are not very compelling in the context of fuel reduction in WUI forests, which is necessary to avert wildfire—a far greater menace than small engine emissions.[93] Electrically powered equipment is less effective in the forest than is gas-powered equipment (which is why the bans

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[90] *See* Sydney Sheffield, *California to Ban Gas-Powered Lawn Equipment*, AM. SOC'Y ANIMAL SCI. (Oct. 25, 2021), https://www.asas.org/taking-stock/blog-post/taking-stock/2021/10/25/california-to-ban-gas-powered-lawn-equipment [https://perma.cc/3QYK-WT6G] ("Starting as early as 2024, the state of California will ban the sale of gas-powered lawnmowers, leaf blowers, and chainsaws. The law requires all newly sold small-motor equipment primarily used for landscaping to be zero-emission.").

[91] *See* A.B. 1346 Reg. Sess. (Cal. 2021) (taking effect in 2024, calling for regulations to ban the sale of any chainsaw that produces less than 25 horsepower, a classification that includes most chainsaws used by family forestland owners). Oregon's Senate Bill 525 and Washington's House Bill 1868, both introduced in 2023 and not yet approved, seek to impose similar restrictions. *See* S.B. 525, 82nd Leg. Assemb., Reg. Sess. (Or. 2023) (applying restrictions to small nonroad engines produced on or after January 1, 2026, with the goal of reducing emissions); H.B. 1868, 68th Leg., Reg. Sess. (Wash. 2024) (requiring "rules to prohibit engine exhaust and evaporative emissions from new outdoor power equipment").

[92] *See* Don Jenkins, *Washington Lawmaker Proposes Ban on Small Gas Engines*, CAP. PRESS (Dec. 7, 2023), https://www.capitalpress.com/ag_sectors/rurallife/washington-lawmaker-proposes-ban-on-small-gas-engines/article_dd3f13ca-946c-11ee-b583-7b09d6c1a51c.html [https://perma.cc/U4JN-88TD] (describing the impetus for the legislation and stating that "[s]mall gas engines pollute" and that "residents value the quiet of electric equipment"); *see also* Nigel Jaquiss, *A Fight Over Gas-Powered Leaf Blowers and Chain Saws Pits Portland Against Oregon*, WILLAMETTE WK. (Mar. 29, 2023 6:49 AM), https://www.wweek.com/news/2023/03/29/a-fight-over-gas-powered-leaf-blowers-and-chain-saws-pits-portland-against-oregon/ [https://perma.cc/KE4D-MY43] (explaining that "many residents of urban areas hate gas-powered leaf blowers with a passion").

[93] *See* Barrett, *supra* note 78, at 17 (noting how fuel reduction can dramatically decrease the risk of wildfires); *cf.* Jenkins, *supra* note 92 (discussing the danger and impracticability of requiring electric equipment for loggers and those using equipment for more than "light landscaping").

generally exempt government fire-fighting agencies),[94] so legislators should allow private forestland owners to utilize this equipment in reducing dangerous fuels.

Similarly, state agencies should reconsider their restrictions on burning in forests. These agencies typically allow more latitude for burning on industrial forestry parcels than on family forestland parcels.[95] The reduction of fuels necessitates fire burning of slash piles and dead standing trees. This concern is no less urgent on nonindustrial parcels.

E. FAMILY FORESTLAND OWNERS NEED BETTER ACCESS TO INSURANCE

Individual homeowners are losing insurance in the forested WUI, and private insurers seem likely to pull out of certain fire-prone communities altogether.[96] This insurance retreat will not necessarily prod uninsured homeowners to move.[97] The withdrawal

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[94] *See* Jenkins, *supra* note 92 (quoting Jerry Bonagofsky, executive director of the Washington Contract Loggers Association, who indicated that electric chainsaws are not "efficient enough or productive enough" for forest use and also pointing out that the Washington bill would exempt any government agency's use of gas-powered equipment to fight a fire).

[95] The Oregon Department of Forestry issues "public fire restrictions" and "industrial fire restrictions," with the latter category generally allowing greater latitude for the use of fire forestry operations. *See Fire: Restrictions & Closures*, OREGON.GOV, https://www.oregon.gov/odf/fire/pages/restrictions.aspx [https://perma.cc/6UZ4-7DSM] (publicizing the Oregon Department of Forestry's public and industrial fire restrictions). The Washington State Department of Natural Resources also has unique fire regulations for industrial forestry operations and mentions that these regulations are for "unimproved" land. *See Industrial Fire Precaution Levels (IFPL)*, WASH. STATE DEP'T NAT. RES., https://www.dnr.wa.gov/ifpl [https://perma.cc/XQ3S-VMDV](discussing the industrial precaution fire levels in Washington State).

[96] Brandon A. Prince, *Using Federal Power to Compel Fire Prevention and Address Growing Property Insurance Issues in Wildland-Urban Interface*, 28 HASTINGS ENV'T L.J. 149, 165–66 (2022) ("Private insurers are increasingly reluctant to offer affordable coverage in western WUI communities . . . . [P]rivate insurance companies with pools of high-risk customers in the West may not renew these policies or risk pricing their customers out of the market. In California, insurance companies even deny coverage to fire-hardened properties in high-risk areas." (footnotes omitted)).

[97] *See* Gebelhoff, *supra* note 32 (reporting that, in other areas prone to natural disaster, the loss of private insurance has not persuaded homeowners to relocate from flood hazard zones).

of private insurers will disproportionately harm low-income and minority households,[98] and it will reduce wildfire preparedness because insurance companies will no longer be providing inducements for fire-proofing.

To address the harms resulting from this insurance retreat, one option would be for the federal government to provide standalone wildfire insurance in WUI communities that agree to certain fire-proofing measures.[99] Perhaps the federal government could establish a single National Catastrophic Insurance Program selling a bundled policy covering a range of natural disasters, including wildfires, floods, landslides, and hurricanes; the nationwide scope could protect against adverse selection.[100] Another possible role for the government would be to provide reinsurance protecting insurance companies from wildfire-related losses above a certain cap.[101] Whatever the particular strategy, the government should find a way to aid family forestland owners abandoned by private insurance companies. These landowners are providing a public

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[98] *See supra* notes 38–40 (discussing the disparate impact that insurance retreat has on low-income households).

[99] Prince, *supra* note 96, at 175–86 (proposing a National Wildfire Insurance Program that would make standalone wildfire insurance available in WUI committees that commit to enacting certain safeguards, and would allow private insurers to continue operations in these communities, likely emboldened by the federal government's coverage of wildfire risk).

[100] French, *supra* note 16, at 854–57 (proposing that the federal government offer a single bundled policy insurance covering a range of natural disasters, thereby avoiding the adverse selection problems that would otherwise make wildfire insurance unaffordable in Western states); *see also id.* at 854–55 ("Adverse selection theory posits that a person who thinks his house may be damaged by a wildfire because he lives in a dry forest in California, Washington, Oregon, or Colorado is more likely to want to purchase wildfire insurance than someone who lives in Pittsburgh, Pennsylvania, which gets some type of precipitation at least twice a week year round. Consequently, adverse selection is a serious concern with respect to standalone insurance. Only people at the highest risk will likely buy it.").

[101] Advocates with Public Citizen's Climate Program have recommended "public solutions to provide reinsurance, which is essentially insurance for insurance companies." David Arkush & Carly Fabian, Opinion, *Like a Bad Neighbor, State Farm Is Gone from California*, S.F. CHRON (July 12, 2023, 2:35 PM), https://www.sfchronicle.com/opinion/openforum/article/state-farm-california-insurance-18175993.php# ("Public reinsurance programs would facilitate reimbursements for claims above a high dollar amount to insurers that expand their coverage, allocating risks in a way that creates stability for insurers and a stronger safety net for the public. . . . [A] public backstop for the highest losses would provide more certainty for insurers who want to offer coverage in vulnerable areas while creating a stronger safety net for consumers.").

service by tending forests that sequester carbon, and their inability to obtain insurance threatens not only their lives but also the climate benefits supplied by their forests.

F. FAMILY FORESTLAND OWNERS NEED REVISIONS OF TAX LAW

Tax deferral is tremendously important for family forestland owners because many of them could not afford to retain their land holdings otherwise. Presently, tax deferral is conditional upon growing dense stands of commercially viable trees.[102] Climate change has brought about drought conditions that require the growth of different species,[103] and that necessitate a lower density to conserve scarce moisture in the soil and minimize the spread of canopy fires.[104] States should revise their tax codes so that tax deferrals remain available for low-density stands and for noncommercial forest uses. Currently some states reduce the tax rate for forestland owners who commit to using their forestland as wildlife habitat.[105] Such programs have limited scope, however, and there is not a similar tax rate for forestland owners who give up commercial forestry but whose forests lack sufficient habitat value

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[102] *See, e.g.*, OR. DEP'T OF REVENUE, 2017 FORESTLAND MANUAL 1-1, 2-7 to 2-8 (2017) (explaining that to qualify for the favorable commercial tax status, a forestland owner must grow "marketable" species of trees and must have at least 200 trees per acre). One reason for these requirements was to ensure that the state's lumber mills would have an adequate supply of timber.

[103] *See supra* notes 48–49 and accompanying text (discussing the increasing difficulty of growing marketable tree species in drought conditions).

[104] Sandra Hines, *Without Thinning the Worst Is Yet to Come for Fire-Prone Forests*, UNIV. WASH (Sept. 26, 2003), https://www.washington.edu/news/2003/ 09/26/without-thinning-the-worst-is-yet-to-come-for-fire-prone-forests/ [https://perma.cc/L647-MESN] (stating that "the most effective treatment" of a forest for wildfire resiliency is to thin stands, striving for a target density of 40 to 100 trees per acre); *see also* MONT. STATE UNIV., DEVELOPING A WILDFIRE HAZARD REDUCTION PLAN FOR YOUR PROPERTY, THE MOUNT HELENA EXAMPLE 6–7, https://www.montana.edu/extension/forestry/publications/fact-sheets/FF_Developing%20Fire%20Hazard%20Reduction%20Plan_PK.pdf [https://perma.cc/DQN6-EQMA] ("An average of 30 to 40 mature conifers per acre will be the target density for the most fire-resistant configuration.").

[105] *See, e.g.*, *Wildlife Habitat Conservation and Management Program (WHCMP)*, OR. DEP'T FISH & WILDLIFE (Feb. 28, 2024, 12:38 PM) https://www.dfw.state.or.us/lands/whcmp/ [https://perma.cc/XN3E-Y4GP] (explaining that the WHCMP reduces tax rates to the same level as would apply to commercial forestland, but Oregon Department of Fish and Wildlife can only allow a limited number of landowners to participate in the WHCMP).

to qualify for the existing conservation program. States should treat carbon sequestration as a favored use of forests, entitled to the same reduced taxes as preservation of habitat. States should also consider giving tax breaks for fuel reduction and other safeguards that reduce fire risk. The net effect of such tax reform may be to save the states money because firefighting is tremendously expensive.[106]

IV. FORESEEABLE OBJECTIONS

Several possible objections to this Article's recommendations deserve mention here. To be sure, each of the objections has a kernel of truth, but taken overall, the objections do not undermine this Article's central argument: that empowerment of family forestland owners to reduce wildfire risk is a better near-term strategy than more drastic alternatives such as construction moratoria, insurance withdrawal, and relocation of communities from the forested WUI.[107]

A. *IN SITU* ADAPTATION JUST DELAYS THE INEVITABLE RETREAT FROM THE FORESTED WUI

Advocates of managed retreat want to start the process at an early stage, because it is likely to be more painful and difficult if it must happen quickly when conditions become intolerable.[108] Some of these advocates express the concern that notions of resistance and resiliency might lull forestland owners into a false sense of complacency, distracting attention and resources from preparation for relocation.[109] Yet the opposite could also be true: premature

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[106] *Cf.* Thurman, *supra* note 18, at 1088 (discussing the long-term cost savings achieved by retrofitting homes in the forested WUI so that they are more resistant, saving money by lowering the cost of firefighting later).

[107] *See supra* Parts I, II.

[108] *See* Mach & Siders, *supra* note 24, at 1296 ("Proactive retreat, planned before slow-onset changes severely threaten lives, livelihoods, and other things people value, is likely to be more effective and to reduce the psychological, sociocultural, and implementation burdens of retreat.").

[109] *See* NEXT 10 & U.C. BERKELEY CTR. FOR CMTY. INNOVATION, REBUILDING FOR A RESILIENT RECOVERY: PLANNING IN CALIFORNIA'S WILDLAND URBAN INTERFACE 2 (2021), https://www.next10.org/sites/default/files/2021-06/Next10-Rebuilding-Resilient-Final.pdf [https://perma.cc/GXZ4-U2PM] (indicating that *in situ* resiliency measures, while

obsession with relocation could distract family forestland owners from fire-proofing their homes and forests, and could thereby exacerbate fire risk in the near term. It is also important to consider that communities may be more receptive to proactive managed retreat when they have exhausted the options for *in situ* adaptation.[110] *In situ* measures do not foreclose relocation. These measures are an experiment that, if unsuccessful, could prove the need for relocation.

B. ASSISTANCE TO HOMEOWNERS IN THE FORESTED WUI CREATES A "MORAL HAZARD"

Some critics argue that when the government intervenes to help homeowners with costs resulting from foreseeable natural catastrophes in a particular area, the government ironically incentivizes reckless decision-making by residents who remain in that area.[111] One often-cited example is the National Flood Insurance Program, which enables homeowners to rebuild in floodplains despite the regular recurrence of floods.[112] Some commentators extend the "moral hazard"[113] argument to proposals

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economically preferable, may be suboptimal and even counterproductive, distracting at-risk communities from the preferable policy course of "redirecting" from the WUI).

[110] *See* Ruhl & Craig, *supra* note 17, at 237 ("At some point resistance and resilience strategies may simply fail to manage risk to acceptable levels at acceptable cost, leaving retreat as the only viable option.").

[111] *See* Jim Tankersley & Christopher Flavelle, *Biden Warns That Climate Change Could Upend Federal Spending Programs*, N.Y. TIMES (Mar. 20, 2023), https://www.nytimes.com/2023/03/20/us/politics/climate-change-federal-spending.html (cautioning that "federal policies like fighting forest fires . . . could continue to encourage Americans to live and work in areas at high risk of damage from warming temperatures and extreme weather").

[112] *See* Thurman, *supra* note 18, at 1091–92 (comparing the moral hazard of subsidizing development in fire prone areas to the moral hazard of subsidizing development in flood prone areas under the National Flood Insurance Program).

[113] *See* Cassandra Jones Havard, *What Does 'Moral Hazard' Mean?*, UNIV. S.C. (Mar. 21, 2023), https://sc.edu/uofsc/posts/2023/03/conversation_moral_hazard.php [https://perma.cc/T6ZD-H7PU] ("'Moral hazard' refers to the risks that someone or something becomes more inclined to take because they have reason to believe that an insurer will cover the costs of any damages.").

for government programs that would make insurance and other benefits available to homeowners in the forested WUI.[114]

But there are several reasons why this comparison of forests and floodplains lacks merit. First, there is no comparable "moral hazard" when the government helps family forestland owners perform a valuable public service—maintaining forests that commercial companies and the government are unwilling to maintain[115]—while homeowners in floodplains provide no such public benefit.[116] Second, homeowners in the forested WUI (especially low-income homeowners) would not leave if they lost insurance,[117] so the government's help with insurance could not be faulted as the reason for their continued residence in this zone. Third, the provision of government-backed insurance would not lead homeowners in the forested WUI to be reckless with fire risk, because no one wants to die in a forest fire, whether or not insurance benefits are available.[118] Finally, the "moral hazard" argument does not apply uniquely to the resiliency measures favored in this Article; the government is already committed to firefighting in the WUI, which could embolden WUI residents to stay in this zone; so the incremental "moral hazard" of subsidizing insurance and fire-proofing is negligible.[119]

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[114] *See* French, *supra* note 16, at 861–62 (indicating that critics of a government-backed wildfire insurance for forested WUI invoke the "moral hazard" argument); Sivas, *supra* note 17 (commenting that "public safety net programs" for homeowners in the aftermath of floods and earthquakes "feel morally right" but create a "'moral hazard' that homeowners will simply rebuild in the same fire-prone location").

[115] *See supra* section I.C (explaining that governments and industrial forestry companies are unwilling or unable to acquire forestland in the WUI).

[116] *See* Lehmann, *supra* note 59 (discussing the differences between the dangers posed by wildfire and floods and stating that "[m]ore development in flood-prone regions magnifies the degree of flood risk in a more or less linear fashion" and that more development in an area *negatively* affects the public interest by increasing the number of "impermeable surfaces" that inhibit drainage).

[117] *See* Gebelhoff, *supra* note 32 (observing that homeowners often continue living in hazardous areas even after losing insurance coverage).

[118] *See* French, *supra* note 16, at 864 ("The moral hazard argument is also intuitively weak because wildfires place people's lives at risk. Most people would take steps to avoid being burned to death while sleeping if they knew how to avoid it even if their estates would recover insurance proceeds following their deaths.").

[119] *See* Thurman, *supra* note 18, at 1091–92 (pointing out that the "moral hazard" argument is "a few steps behind" because "this hazard is already present in the provision of firefighting services in the WUI").

C. THE BEST SOLUTION IS TO LEAVE THE WUI VACANT AND LET IT BURN

Some commentators want to evacuate homeowners from the forested WUI so it would be easier to conduct regular controlled burning in this zone.[120] These commentators correctly point out that the surplus fuels and dense tree stands that create such dire fire danger today are attributable to excessive fire suppression over the past several decades.[121] The potential value of controlled burning does not, however, provide a good reason to drive away homeowners from the forested WUI. To begin with, only a fraction of forestland is suitable for purposeful low-intensity fires, whether or not human settlement is nearby.[122] Furthermore, to the extent that controlled burning could be beneficial in the forested WUI, family forestland owners should be viewed as part of the solution, not part of the problem. The government is too backlogged with its own controlled-burning projects to take over burning on privately owned WUI parcels.[123] If WUI homeowners evacuated, their vacant parcels would become overgrown and would be greater fire hazards.[124] If WUI homeowners remained, they could conduct thinning operations and burn the slash.[125]

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[120] *See generally* Umair Irfan, *We Must Burn the West to Save It*, VOX (July 13, 2021, 8:04 AM), https://www.vox.com/21507802/wildfire-2020-california-indigenous-native-american-indian-controlled-burn-fire [https://perma.cc/BF4L-RHKT] (discussing value of controlled burns in reducing risk of uncontrolled megafires and suggesting that such controlled burns may be more difficult if residential communities are nearby).

[121] *See* Irfan, supra note 77 (discussing the role of overzealous fire suppression in fuel buildup); *cf.* Barrett, *supra* note 78, at 6–15, 17–18 (discussing the beneficial effects of periodic fires and faulting the strategy of suppression, but ultimately suggesting that prescribed burns can be part of WUI communities' adaptation plan).

[122] *See* Radeloff et al., *supra* note 1, at 706 ("In some forests, thinning to reduce fuel loads, followed by prescribed surface fires, can reduce the likelihood of crown fires and revert the negative effects of past fire suppression. However, this strategy is only suitable for those forest types that are adapted to low-intensity surface fires, such as low-elevation forests in the mountainous West . . . ." (citations omitted)).

[123] *See* Irfan, *supra* note 120 (indicating that federal and state forest managers are far behind their schedules for controlled burning on public forestlands).

[124] *See* O'Connell, *supra* note 16, at 363 (pointing out that vacant forestland could pose a greater wildfire risk than forestland managed by a homeowner).

[125] *See* Barrett, *supra* note 78, at 17–18, 27 (discussing different methods of reducing the risks of wildfire and the role that homeowners can play).

V. CONCLUSION

This Article has made four main claims about the forested WUI in the West. First, the presence of family forestland owners offers the best hope of maintaining healthy, fire-resistant forests in this zone because the government and industrial forestland owners are unlikely to take over family ownerships, and unattended forestland is at great risk in drought conditions.[126] Second, while some restrictions on future WUI development make sense—preserving the option for renovation, replacement, and occasional new development on forested parcels of eighty acres or more—fire safety does not necessitate drastic measures such as across-the-board construction moratoria, insurance retreat, or large-scale relocation of WUI residents, at least in the near term.[127] Third, such drastic measures would raise a host of other concerns relating to environmental justice, regulatory takings, and deforestation.[128] Fourth, the best near-term strategy would be to empower family forestland owners with incentives and support for the reduction of wildfire risk on their properties.[129]

Reasonable people will continue to disagree about the optimal response to the climate crisis wreaking havoc on the forested WUI in the West. While the debate continues, cautious policymakers should experiment with *in situ* adaptation measures, mindful that more drastic measures may eventually be necessary.

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[126] *See supra* Part II.

[127] *See supra* Part I.

[128] *See supra* sections I.E–F.

[129] *See supra* Part II.