FIGHTING FIRE WITH FINANCE: HOW RISK RETENTION GROUPS CAN IGNITE SAFER PRESCRIBED BURNING PRACTICES

BY

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Prescribed burning is an established land management practice crucial to reducing wildfire risk and enhancing ecosystem resilience, yet it remains significantly underutilized due to legal uncertainties, liability risks, and prohibitive insurance costs. Current approaches—combining tort liability standards, regulatory mandates, and commercial insurance requirements—have produced fragmented and inadequate incentives that neither sufficiently encourage safer burning practices nor reliably compensate injured parties. This Article critically evaluates these existing legal frameworks and proposes an innovative, legally grounded solution: the creation of Risk Retention Groups (RRGs) under the federal Liability Risk Retention Act. By offering specialized, member-owned liability coverage that operates outside of restrictive state-by-state regulations, RRGs provide robust incentives for data-driven risk management, clear standards of accountability, and adaptive best practices. Adopting a RRG-centered legal framework thus promises to clarify and stabilize prescribed burn liability, enhance regulatory effectiveness, and significantly reduce barriers to the beneficial use of fire in land management.

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I. INTRODUCTION

Prescribed burning—deliberately setting fires on pasture, crop, and forest land—is an accepted practice that produces environmental and land management benefits.[1] The legal environment for the deliberate use of fire has changed dramatically. "In 1880 a landowner . . . answer[ed] to no one other than his immediate neighbors, who probably also wanted to burn. Today, any burn involve[s] a 'complex web of policy, legal statutes, and liability, as well as public safety, health, and acceptance.' To apply the torch was no longer strictly an individual choice."[2] Benefits come with risks: even well-planned and managed fires can cause harms when winds shift or a fire reignites.[3] The risk of litigation from such harms is a

[1] Florida regulations provide a concise definition of a "prescribed burn." FLA. ADMIN. CODE ANN. r. 51-2.003(24) (2025) ("[T]he application of fire by broadcast burning for vegetative fuels under specified environmental conditions while following appropriate measures to guard against the spread of fire beyond the predetermined area to accomplish planned fire or land management objectives."); *see infra* notes 15–16, 18–19, 24–25 and accompanying text (supporting that prescribed burning produces environmental and land management benefits).

[2] STEPHEN J. PYNE, BETWEEN TWO FIRES: A FIRE HISTORY OF CONTEMPORARY AMERICA 436 (2015) [hereinafter PYNE, BETWEEN TWO FIRES] (quoting Coalition of Prescribed Fire Councils report).

[3] *See* John Rizza & Carrie Berger, *Prescribed Fire Basics: Ignition Techniques and Tools*, OR. STATE UNIV. EXTENSION CATALOG, Apr. 2023, at 1, 2, 4, https://extension.oregonstate.edu/catalog/pub/em-9387-prescribed-fire-basics-ignition-techniques-tools [https://perma.cc/PB3X-M9HW] (explaining that wind shifts can have an adverse influence on prescribed burns and that certain prescribed burns may "spot" new fires across control lines with embers). *See generally* Changyou Sun, *State Statutory Reforms and Retention of Prescribed Fire Liability Laws on U.S. Forest Land*, 9 FOREST POL'Y & ECON. 392, 393 (2006) (noting factors have constrained prescribed fire use on forest lands).

deterrent to conducting prescribed burns: "For many private landowners, the possibility of getting sued, along with potential litigation costs, has been their immediate concern in considering the use of prescribed fires."[4] As recognition of the benefits and risks of regular burning has increased, states have adjusted liability regimes and insurance requirements.[5] This is intended to balance incentives for landowners to engage in beneficial burns while protecting neighbors and those in the vicinity of harms.[6] This Article presents an alternative method, the use of Risk Retention Groups (RRGs), that better aligns the goals of gaining the benefits of increased use of prescribed burns while protecting third parties.

Congress created RRGs in the Product Liability Risk Retention Act of 1981.[7] In 1986, the Liability Risk Retention Act expanded the scope of RRGs to all liability insurance.[8] RRGs are member-owned insurers, licensed in one state but able to operate nationally with limited regulation by other states.[9] Because members own RRGs, any surplus (the reserves left when claims are fewer or smaller) belongs to them, incentivizing them to reduce risks.[10] By contrast, once a premium is paid to a third-party insurer (commercial or state-operated), the money is gone. RRGs also aggregate members' claims data and use them to publish best practices, reducing risks.[11]

This Article first examines the benefits and risks of prescribed burns. It then considers the liability risks associated with prescribed burns and the measures available to manage those risks, focusing on the interaction of tort liability and state regulations. Next, the Article proposes RRGs as a potential solution to some shortcomings of tort liability and traditional insurance providers. Refocusing public policy from liability-focused mechanisms (tort law, mandatory insurance purchase, and state insurance pools) to a RRG-centered model promotes learning and data sharing among prescribed burn practitioners, while ensuring

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[4] Sun, *supra* note 3, at 393.

[5] *See infra* Part III.

[6] *See infra* Part III.

[7] Andrew P. Morriss, *Non-Territorial Special Jurisdictions in the U.S. Insurance Market*, J. SPECIAL JURISDICTIONS, Oct. 27, 2022, at 59, 77 [hereinafter Morriss, *Non-Territorial*]; Product Liability Risk Retention Act of 1981, Pub. L. No. 97-45, § 3, 95 Stat. 949, 950–51 (1981).

[8] Risk Retention Amendments of 1986, Pub. L. No. 99-563, § 3(a), 100 Stat. 3170 (1986); 15 U.S.C. §§ 3901–3906.

[9] *See How Are Risk Retention Groups (RRGs) Regulated?: A Guide to Domiciliary and Non-Domiciliary State Oversight*, NAT'L RISK RETENTION ASS'N, https://www.riskretention.org/news/how-are-risk-retention-groups-rrgs-regulated [https://perma.cc/S4X3-RS7G] (last visited Oct. 1, 2025).

[10] *See* Jerrett Phinney, *How Do Captive Insurers Control Losses?*, CAPTIVE COAL. (Nov. 11, 2024), https://www.captivecoalition.com/en/blog/how-captive-insurers-control-losses [https://perma.cc/X6DC-DHVN] ("Unlike traditional insurance, where policyholders pay premiums based on large averages, captives allow businesses to reduce their premiums by improving risk management and reducing claims. This gives business owners a direct incentive to invest in safety programs and loss prevention.").

[11] *See* Morriss, *Non-Territorial*, *supra* note 7, at 84 (describing two example RRGs' use of aggregate data).

compensation for those who are injured by burns. RRGs leverage these incentives to improve safety and reduce costs.

II. RISKS AND BENEFITS OF PRESCRIBED BURNS

Perceptions in the United States (U.S.) of fire's role in land management have changed dramatically. As Stephen Pyne notes, U.S. fire policy, long led by the Forest Service and shaped by western wildfire experience, began with suppression then gradually and reluctantly shifted to accommodate evidence of fire's benefits to controlling wildfires, including fuel reduction and ecological health.[12] The Forest Service resisted controlled burning based on an intellectual attachment to suppression and the complex network of agreements the Forest Service had forged with state and private organizations built around fire suppression.[13]

Fire is a crucial component of managing pasture, forest land, and even cultivated fields. It can "be a remarkably supple and precise instrument."[14] For grasslands, fire "is part of the fabric of what the system

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[12] PYNE, BETWEEN TWO FIRES, *supra* note 2, at 18, 127 (As Pyne describes, widespread local customs of deliberate burning ran into opposition from the Forest Service in the early 20th century). While the Forest Service could not limit burning on private land, it dominated the intellectual discussion—Pyne argues that "America's fire protection engine, like much of Britain's imperium, operated through indirect rule," *id.* at 10—successfully blocking any serious discussion of the value of burning until 1935, when a participant at the Society of American Foresters' conference noted that the conference was the first time the "censorship" of the topic had been removed, STEPHEN J. PYNE, FIRE IN AMERICA: A CULTURAL HISTORY OF WILDLAND AND RURAL FIRE 115 (Univ. Wash. Press 1997) (1982) [hereinafter PYNE, FIRE IN AMERICA]. For example, in 1927, the Forest Service denied funds it distributed under the Clarke-McNary program to states that tolerated controlled burning, a decision not reversed until 1933. *Id.* Pyne notes that the influx of labor from the New Deal's Civilian Conservation Corps and then the availability of surplus military equipment after World War II let federal agencies promote fire suppression in ways that they would not have been able to do without those resources. PYNE, BETWEEN TWO FIRES, *supra* note 2, at 11, 13. But by the 1970s, the Forest Service embraced prescribed burns. PYNE, FIRE IN AMERICA, *supra* note 12, at 121. While the focus in this Article is on private landowners' burning practices, separating prescribed burning and fire suppression "into separate histories" is a conceptual error, so we will need to consider the broader fire culture at times. *Id.* at xviii.

[13] PYNE, FIRE IN AMERICA, *supra* note 12, at 110 ("To an intellectual elite trained in Ivy League schools and enamored of the technology transferred from Europe, 'Paiute forestry' could no more benefit an industrial civilization than would the Paiute diet of rabbits, grasshoppers, and seeds . . . . Any questioning of the tenets of fire control might jeopardize not only the administration of the national forest system but also . . . agreements between the Forest Service and state and private organizations, an edifice founded on fire and one that made national forestry programs possible."). *See also* Stephen R. Bakken, *The Liability and Environmental Consequences of Not Burning in California*, *in* ENVIRONMENTAL REGULATION & PRESCRIBED FIRE: LEGAL AND SOCIAL CHALLENGES 131, 137 (Dana C. Bryan ed., 1997) ("Six decades of fire suppression, sanctified by laws, has produced out-of-balance ecosystems. When we as ecosystem managers try to re-establish that balance, we run smack into the same adversarial legal system and laws that helped create the imbalance.").

[14] STEPHEN J. PYNE, BURNING BUSH: A FIRE HISTORY OF AUSTRALIA 208 (Univ. Wash. Press 1998) (1991).

needs. It creates a more productive, resilient system. Fire is an aboveground stimulant and a belowground catalyst."[15] Fire can be superior to other methods of land management: "No other management practice feeds the soil, cycles nutrients, supports plant diversity and creates resiliency in a rangeland system like fire. It can't be mimicked by any other management practice, and it's the missing link in so many rangeland systems."[16] However, as North America became settled and land use patterns changed, the introduction of fire suppression caused dramatic changes: "Grasslands and prairies are being invaded by trees; savannas and open woodlands are becoming closed canopy forests; and prairie birds are declining with some species now threatened or endangered."[17] Reintroducing fire thus offers ways to restore ecosystems.

Fire can increase plant diversity (which correlates with wildlife diversity and ecosystem health), inhibit woody encroachment into prairies and reduce understory growth in forests and woodlands (reducing the risks of uncontrolled fires), improve plant nutrient content and availability for herbivores, reduce plant thatch for species requiring bare ground, reduce invasive species and help control pests, stimulate root growth, release nutrients in the soil, and improve land productivity.[18] Using prescribed burns in land management is an important tool in forestry and agriculture: as one scientific review concluded, fire in land management "is essential. It is an issue of ecosystem function and health. There are no substitutes."[19]

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[15] Martha Mintz, *Playing with Fire: When Manageable Risk Delivers Great Reward*, NOBLE RSCH. INST., https://www.noble.org/regenerative-agriculture/prescribed-burn/playing-with-fire-when-manageable-risk-delivers-great-reward/ [https://perma.cc/77NA-Q8RJ] (last visited Oct. 1, 2025) (quoting Morgan Treadwell, rangeland specialist); Karen J. King & Joanne Chapman, *Using Statistics to Determine the Effectiveness of Prescribed Burning*, *in* CONTRIBUTIONS TO PROBABILITY AND STATISTICS: APPLICATIONS AND CHALLENGES 73, 74 (Peter Brown, Shuangzhe Lui & Dharmendra Sharma eds., 2006) (arguing prescribed burning is a vital land management tool used to reduce wildfire fuel loads, improve pasture and forest health, and maintain ecosystems).

[16] Mintz, *supra* note 15 (quoting Morgan Treadwell, rangeland specialist). *See also Tampa Declaration*, *in* ENVIRONMENTAL REGULATION & PRESCRIBED FIRE: LEGAL AND SOCIAL CHALLENGES 1,3 (Dana C. Bryan ed., 1997) ("Fire is an integral part of many, if not all, wildland ecosystems. Disruption of historical fire cycles has led to declining ecosystem values, species loss, and catastrophic wildfire events.").

[17] *Prescribed Fire Community Information*, PRESCRIBED FIRE, https://prescribed-fire.extension.org [https://perma.cc/77NA-Q8RJ] (last visited Oct. 1, 2025).

[18] Mike Porter, *Pros and Cons of Burning*, NOBLE RSCH. INST., https://www.noble.org/regenerative-agriculture/prescribed-burn/pros-and-cons-of-burning/ [https://perma.cc/77NA-Q8RJ] (last visited Oct. 1, 2025); Mintz, *supra* note 15; Terrence G. Bidwell et al., *Fire Effects in Native Plant Communities*, OKLA. EXTENSION COOP. SERV., Mar. 2017, at 1, 12, https://extension.okstate.edu/fact-sheets/print-publications/nrem/fire-effects-in-native-plant-communities-nrem-2877.pdf [https://perma.cc/77NA-Q8RJ]; Joseph M. DiTomaso et al., *Control of Invasive Weeds with Prescribed Burning*, 20 WEED TECH. 535, 541–42 (2006) (describing use of prescribed burns as part of an invasive species control program).

[19] Bidwell et al., *supra* note 18, at 12. As an economist, I quibble with the "no substitutes" conclusion. There are always substitutes, the question is their cost. But I include the quote because it captures the urgency with which scientists in land management view the expanding use of fire.

Evidence suggests that prescribed burning is generally safe[20]—one study found that less than 1% of prescribed burns escaped and most that did left negligible damage,[21] but another study with overlapping authors found up to 3.6% escaped.[22] Yet fires are inherently risky,[23] and when burns do escape there can be large losses.[24] Expansion of development in the wildland-urban interface (WUI)—the zone where "homes and other structures meet or intermix with natural vegetation"—constrains prescribed burning and makes it harder to carry out burns.[25] As exurban populations spread into fire-dependent lands, fire officers were "compelled . . . to shift from managing large [tracts] of land to a fractal frontier that unbalanced the geography around it. Fire protection was about edges, and the interface multiplied edges with the fecundity of bark beetles."[26]

Not only can fires become uncontrolled—damaging property, endangering people and wildlife—but smoke from the fire can drift onto highways, cause accidents, and reduce air quality; fires can also exacerbate droughts.[27] Prescribed burns contribute significant

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[20] John R. Weir et al., *Liability and Prescribed Fire: Perception and Reality*, 72 RANGELAND ECOLOGY & MGMT. 533, 536 (2019) [hereinafter Weir et al., *Perception and Reality*]. The same article summarizes other sources with similar findings. *Id.* at 534, 536–37; John R. Weir et al., *Prescribed Burning: Spotfires and Escapes*, OKLA. EXTENSION COOP. SERV., Aug. 2017, at 1, 1, https://extension.okstate.edu/fact-sheets/print-publications/nrem/prescribed-burning-spotfires-and-escapes-nrem-2903.pdf [https://perma.cc/R384-JVP3] [hereinafter Weir et al., *Spotfires and Escapes*].

[21] Rahan Parajuli et al., *To Insure or Not to Insure? Factors Affecting Acquisition of Prescribed Burning Insurance Coverage*, 72 RANGELAND ECOLOGY & MGMT. 968, 968–69, 973 (2019) (noting fire may escape when weather and other factors are beyond human control).

[22] Weir et al., *Spotfires and Escapes*, *supra* note 20, at 6.

[23] *Id.* (noting fire carries inherent risks).

[24] The Mack Lake fire in 1980 in the Great Lakes region was a prescribed burn that, within 90 minutes of ignition, had escaped its designated zone. PYNE, BETWEEN TWO FIRES, *supra* note 2, at 179–80. It eventually covered 24,000 acres and caused one death. *Id.*

[25] Jennifer K. Costanza & Aaron Moody, *Deciding Where to Burn: Stakeholder Priorities for Prescribed Burning of a Fire-Dependent Ecosystem*, *in* ECOLOGY & SOC'Y, Mar. 2011 at 1, 2. New Jersey's legislature included a finding on this point in its Prescribed Burn Act. N.J. REV. STAT. § 13:9-44.12 ("The Legislature also . . . declares that as New Jersey's population . . . grow[s], pressures from liability issues and smoke nuisance complaints cause prescribed burn practitioners to limit prescribed burn activity, thereby reducing the above described benefits of these burns to the State; and that public misunderstanding of the benefits of prescribed burning to the ecological and economic welfare of the State inhibits full use of this valuable resource management tool."). *See also* James L. Murphy & Frank T. Cole, *Overview of the Impact of Federal Constraints to Prescribed Burning*, *in* ENVIRONMENTAL REGULATION & PRESCRIBED FIRE: LEGAL AND SOCIAL CHALLENGES 16, 17 (Dana C. Bryan ed., 1997) (attributing growing constraints on burning to "people [becoming the] dominant element of most wildland ecosystems" with a "highly predictable" impact on the ability to burn).

[26] PYNE, BETWEEN TWO FIRES, *supra* note 2, at 189.

[27] Porter, *supra* note 18; Rodney L. Busby, Terry K. Haines & David A. Cleaves, *Prescribed Burning in the South – Acreage, Purpose, and Barriers*, *in* PROCEEDINGS OF THE SOCIETY OF AMERICAN FORESTERS: 1999 NATIONAL CONVENTION, PORTLAND, OREGON 526, 526 (2000); Christopher J. Rogers et al., *Perceived Wildfire Risk and Past Experiences with*

particulate matter air pollution.[28] Escaped fire or smoke incidents can also cause business losses or loss of life, leading to lawsuits or regulatory penalties.[29] Surveys have found legal liability is a key concern of landowners considering burning.[30] Days or weeks after a burn,

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Wildfire Smoke Influence Public Support for Prescribed Burning in the Western Coterminous United States, BMC PUB. HEALTH, Jan. 2025, at 1, 2 ("Prescribed burns do incur some degree of risk, including air quality impacts which, in turn, impact the health of vulnerable populations . . . ."); D.A. Cleaves & T.K. Haines, *Regulation and Liability Risk: Influences on the Practice and the Pricetag of Prescribed Burning*, *in* ENVIRONMENTAL REGULATION & PRESCRIBED FIRE: LEGAL AND SOCIAL CHALLENGES 165, 172 (Dana C. Bryan ed., 1997) [hereinafter Cleaves & Haines, *Regulation and Liability Risk*] (smoke drifting on highways created a major risk in South: 1979–1988 had twenty-seven accidents in the South attributed to smoke from prescribed fires with twenty-seven fatalities, and more than fifty serious injuries). In one case, a landowner's prescribed burn produced smoke, resulting in an accident and a truck driver losing his job. Waters v. ITT Rayonier, Inc., 493 So. 2d 67, 67–68 (Fla. Dist. Ct. App. 1986). The truck driver sued and the court of appeals found that "a jury of reasonable persons might infer from the evidence that Rayonier could foresee the possibility of *some* injury, even the possibility of loss of wages in particular," and so summary judgment was inappropriate. *Id.* at 69 (emphasis in original).

[28] Ran Huang et al., *The Impacts of Prescribed Fire on PM2.5 Air Quality and Human Health: Application to Asthma-Related Emergency Room Visits in Georgia, USA*, INT'L J. ENV'T RSCH. & PUB. HEALTH, June 29, 2019, at 1, 1–2 (describing how prescribed burns contribute fourteen percent of total primary PM2.5 emissions in the U.S. nationally, 30% in the Se. U.S.); Sadia Afrin & Fernando Garcia-Menendez, *The Influence of Prescribed Fire on Fine Particulate Matter Pollution in the Southeastern United States*, GEOPHYSICAL RSCH. LETTERS, July 17, 2020, at 1, 4–5 (noting correlation of high PM2.5 readings and fire-intensive areas); Laura Kiely et al., *California Case Study of Wildfires and Prescribed Burns: PM2.5 Emissions, Concentrations, and Implications for Human Health*, 58 ENV'T SCI. & TECH. 5210, 5210 (2024) (using modeling to compare prescribed burns to wildfires). *But see* Claire L. Schollaert et al., *Quantifying the Smoke-Related Public Health Trade-offs of Forest Management*, 7 NATURE SUSTAINABILITY 130, 133–34 (2024) (noting increased use of prescribed burns in one study reduced overall exposure to smoke exposure because it limited wildfire smoke). Prescribed burns may have other advantages over wildfires in terms of air pollution:

> [prescribed burns] consume less biomass than wildfire due to their lower fire intensity and the controlled environmental conditions, typically burning less than 50% of the available fuel. The type of fuel also plays a crucial role, as [a prescribed burn] produces approximately one-tenth the emissions of wildfire, primarily because they do not consume canopy fuels that are typically involved in wildfire. Moreover, [a prescribed burn] can reduce the travel distance of wildfire smoke by lowering wildfire temperatures, thereby decreasing the height of the fire plume. The height of the fire plume is a key factor in determining the travel distance of smoke.

Jianzhou Qi & Jun Zhuang, *An Optimization Approach to Prescribed Burning for Mitigating PM2.5 Emissions in Wildfire Management*, J. ENV'T MGMT., Feb. 27, 2025, at 1, 2 (references omitted). *But see* Benjamin A. Jones & Robert P. Berrens, *Prescribed Burns, Smoke Exposure, and Infant Health*, 39 CONTEMP. ECON. POL'Y 292, 307 (2020) (suggesting aggregate harm in Georgia from prescribed burn PM2.5 exposure exceeds aggregate harm from prevented wildfires).

[29] *See* Urs P. Kreuter et al., *Perceptions of Texas Landowners Regarding Fire and Its Use*, 61 RANGELAND ECOLOGY & MGMT. 456, 463 (2008) (noting landowners' concerns about the legal liability of initiating prescribed fire and a lack of insurance policies that cover unintended damages).

[30] *Id.* (explaining how landowner "concerns about the legal liability they face when initiating a fire need to be squarely addressed" to increase burn participation); Parajuli et

smoldering embers may be blown onto neighboring property and cause damage.[31] There are no comprehensive statistics on how often burns lead to fires escaping, but estimates gathered by a 2017 survey reported a 16–20% chance of a "spotfire" (defined as "ignitions that occur outside the burn area"), and a 1.5–3.6% chance of an escaped fire, typically caused by windborne embers.[32] More sophisticated modeling can yield further insights into techniques that reduce the risk of escapes.[33]

Devastating fires in California in recent years have renewed calls for greater use of prescribed burns to reduce the risk of future catastrophic fires.[34] Officials identified increased use of prescribed burns as a key strategy component to prevent high-severity wildfires.[35] Damage to third parties from prescribed burns is, at least in part, predictable based on conditions present when the burn was conducted. For example, a study of ninety-nine prescribed burns conducted at the Oklahoma State University Research Range found that twenty-one "spotfires" (defined as "a fire outside the burn unit") occurred.[36] Interviews found that "spotfires or risk of escape (liability) is the main reason many [private and public land managers] do not conduct prescribed fires."[37] The risk of a spotfire

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al., *supra* note 21, at 968 ("Despite its multiple benefits for hazardous fuel reduction and ecosystem restoration, many private landowners are still reluctant to use prescribed fire because of concerns over legal liability associated with escaped fire . . . ."); Urs P. Kreuter et al., *Landowner Perceptions of Legal Liability for Using Prescribed Fire in the Southern Plains, United States*, 72 RANGELAND ECOLOGY & MGMT. 959, 963–64 (2019) [hereinafter Kreuter et al., *Landowner Perceptions*] (noting that concerns over liability affect willingness to engage in prescribed burning); *Tampa Declaration*, *in* ENVIRONMENTAL REGULATION & PRESCRIBED FIRE: LEGAL AND SOCIAL CHALLENGES, *supra* note 16, at 1–2.

[31] *See* Dep't of Agric. & Consumer Servs. v. Shuler, Ltd. P'ship, 139 So. 3d 914, 918 (Fla. Dist. Ct. App. 2014) (describing how a "spotover" from a prescribed burn blew onto a neighboring property and caused 835 acres to burn).

[32] Weir et al., *Spotfires and Escapes*, *supra* note 20, at 1–2.

[33] *See* King & Chapman, *supra* note 15, at 76–78 (describing use of modeling); *id.* at 85–86 (discussing results).

[34] Kara Manke, *Twenty-year Study Confirms California Forests are Healthier When Burned—or Thinned*, U.C. BERKELEY NEWS (Dec. 12, 2023), https://news.berkeley.edu/2023/12/12/twenty-year-study-confirms-california-forests-are-healthier-when-burned-or-thinned/ [https://perma.cc/M37G-AEXD]; Scott L. Stephens et al., *Forest Restoration and Fuels Reduction Work: Different Pathways for Achieving Success in the Sierra Nevada*, ECOLOGICAL APPLICATIONS, Mar. 2024, at 1, 1–2; Rogers et al., *supra* note 27.

[35] *See generally* Elizabeth L. Kalies & Larissa L. Yocom Kent, *Tamm Review: Are Fuel Treatments Effective at Achieving Ecological and Social Objectives? A Systematic Review*, 375 FOREST ECOLOGY & MGMT. 84 (2016) (review of fifty-six studies of eight western states); *see also* C. Alina Cansler et al., *Previous Wildfires and Management Treatments Moderate Subsequent Fire Severity*, 504 FOREST ECOLOGY & MGMT. 1, 14 (2022) ("[M]anagement treatments that include prescribed fire were most effective at decreasing the severity of subsequent fires."). Note that the Louisiana Supreme Court rejected a claim that landowners with "an over-accumulation of 'scrub shrub'" had a duty to conduct prescribed burns to reduce the risk to neighboring properties of an out-of-control fire. Lowe v. Noble LLC, 235 So. 3d 1095, 1096 (La. 2018).

[36] John R. Weir, *Using Relative Humidity to Predict Spotfire Probability on Prescribed Burns*, *in* PROCEEDINGS: SHRUBLAND DYNAMICS – FIRE AND WATER 69, 70 *(*Rocky Mountain Rsch. Station ed., 2007).

[37] *Id.*

declined dramatically when relative humidity was forty percent or greater (risk fell from 41.3% to 3.8%) and increased dramatically at levels below twenty-five percent relative humidity (rising to 100%).[38] A rule of thumb—categorizing conditions as low (0-25%), moderate (26%-40%), and high (>40%) relative humidity—could guide decisions about whether to burn and, if so, what crew size and equipment are necessary. Nonetheless, local conditions determine whether any particular fire is beneficial or problematic.[39]

Peoples' status as land managers or residential landowners shape their perceptions of the risks of prescribed burns (and fire generally). For the (sub)urbanizing population moving after World War II into communities that had historically made use of burns, "the issue was not whether fire should be wild or prescribed but why it mattered at all."[40] Land managers see fire's utility for commodity production or biodiversity, while residential landowners are more likely to see fire as a threat and are the least likely to support prescribed burning.[41] There are also regional differences in attitudes towards fire. In some communities, particularly in the Southeastern states, there are well-established practices of fire use, while the West has focused on fire suppression.[42]

Proper burning technique balances minimizing third-party costs and maximizing benefit, but there is difficulty in defining and then implementing whatever definition of proper technique the law settles on.[43] Generally, there are direct tradeoffs between effective burns and risks of escapes: "the most risky environment to burn in (hot, dry, lots of

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[38] *Id.* at 70–71.

[39] PYNE, FIRE IN AMERICA, *supra* note 12, at 28 ("Even a full physical description offers only a partial understanding of a fire. A fire whose flaming front burns with an intensity of 200 Btu/ft/s might be a controlled burn in one context and a wildfire in another. Not all damaging fires are large fires: a relatively light surface fire, for example, can destroy young reproduction critical to a reforestation program.").

[40] PYNE, BETWEEN TWO FIRES, *supra* note 2, at 102.

[41] E.C. Moskwa et al., *Perceptions of Bushfire Risk Mitigation and Biodiversity Conservation: A Systemic Review of Fifteen Years of Research*, 24 ENV'T REV. 219, 228–29 (2016); *see also* Dale Wade et al., *Rx Fire Laws: Tools to Protect Fire: The 'Ecological Imperative,' in* FIRE IN EASTERN OAK FORESTS: DELIVERING SCIENCE TO LAND MANAGERS 233, 240 (Matthew B. Dickinson ed., 2005) (noting support from "urbanites" for the use of fire "is often on a conceptual rather than on an operational level," as most do not like the smell of smoke, ash in swimming pools, or delays in driving).

[42] PYNE, BETWEEN TWO FIRES, *supra* note 2, at 87.

[43] For example, choosing the optimal size of the area to be burned requires balancing the efficiency gains in reducing the amount of perimeter requiring management (a particularly costly element of conducting a burn) against heightened risks of escaped fires and increased smoke hazard. James P. Minas & John W. Hearne, *An Optimization Model for Aggregation of Prescribed Burn Units*, 24 TRANSACTIONS OPERATION RSCH. 180, 181–82 (2016). Further complications can arise from including ecological constraints, such as maintaining proportions of particular types of vegetation to support biodiversity, or from balancing the need for greater protection of structures in WUI areas. *Id.* at 190–91; *see also* Kimiko Barrett, *Reducing Wildfire Risk in the Wildland-Urban Interface: Policy, Trends, and Solutions*, 55 IDAHO L. REV. 3, 15–16 (2019) (noting a trend of increased building development in WUI).

vegetation) is also often the most productive burning environment."[44] Operating to minimize escapes increases the cost of burns, reducing the net benefits to the burner.[45] Currently, to engage in prescribed burns, private landowners, contractors, and prescribed burn associations must navigate a complex web of legal liabilities and insurance challenges.[46] It is thus likely that there is less use of fire as a land management tool than would best maintain the health of American pasture, crop, and forest land.[47] A 2011 study calculated that Oklahoma had 9,136,304 hectares of

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[44] Jonathan Yoder, *Liability, Regulation, and Endogenous Risk: The Incidence and Severity of Prescribed Fires in the United States*, 51 J.L. & ECON. 297, 301 (2008) [hereinafter Yoder, *Liability, Regulation, and Endogenous Risk*].

[45] A 1987 survey, notable for its comprehensiveness (taking 6 hours to complete), of seventy-seven Forest Service fire and fuel managers found that "changing the institutional constraint from 'minimizing escapes' to 'minimizing costs' would result in an average reduction of $1,710 per burn." Armando González-Cabán, *Managerial and Institutional Factors Affect Prescribed Burn Costs*, 43 FOREST SCI. 535, 539 (1997). But as the study noted, one escape leading to a large fire "could easily exceed any possible savings accrued from trying to minimize costs." *Id.*

[46] In the mid-1990s, parties complained that "the law of general liability, as codified in statutory law, case law, and administrative rules, is a source of complexity and uncertainty." Cleaves & Haines, *Regulation and Liability Risk*, *in* ENVIRONMENTAL REGULATION & PRESCRIBED FIRE: LEGAL AND SOCIAL CHALLENGES, *supra* note 27, at 181. *See also* William D. Eshee, Jr., *Legal Implications of Using Prescribed Fire*, *in* ENVIRONMENTAL REGULATION & PRESCRIBED FIRE: LEGAL AND SOCIAL CHALLENGES 126, 126 (Dana C. Bryan ed., 1997) ("For many years, the law on prescribed burning in a number of states has been unclear.").

[47] *See* Hannah M. Baker et al., *Implementation, Costs & Benefits of Patch-Burn Grazing*, OKLA. EXTENSION COOP. SERV., Aug. 2023, at 1, 1, https://extension.okstate.edu/fact-sheets/print-publications/agec/implementation-costs-and-benefits-of-patch-burn-grazing-agec-9502-a.pdf [https://perma.cc/F2QK-FGGJ] (among the factors are lack of awareness of the benefits, resistance to changes in management practices, and concern over risks); Busby, Haines & Cleaves, *supra* note 27, at 526 ("Despite its benefits, prescribed fire is increasingly subject to constraints from urban expansion, air quality and other environmental regulations, and liability for smoke intrusions and escaped fires."); Costanza & Moody, *supra* note 25, at 11 (noting the survey responses from North Carolina indicate a higher proportion of private prescribed burn operators relative to public operators tend to avoid sites in the WUI "to avoid smoke management problems," suggesting a greater weight on "immediate outcomes" compared to long-term risks of fire); Busby, Haines & Cleaves, *supra* note 27 (noting that more than twice then current levels of burning on non-industrial private lands in the south would be desirable). The most thorough economic study of the net benefits of prescribed burning that I located concluded that the net benefits of prescribed burning depend heavily on the measure of damages from wildfires, with an accounting of the intensity of wildfires as well as the acreage involved leading to a one-third increase in the amount of prescribed fire necessary to minimize the economic impact of wildfires in the Florida county studied. D. Evan Mercer et al., *Evaluating Alternative Prescribed Burning Policies to Reduce Net Economic Damages from Wildfire*, 89 AM. J. AG. ECON. 63, 74 (2007). Some states have restricted tort liability in an effort to encourage more prescribed burning. *See Shuler*, 139 So. 3d 914, 921 (Fla. Dist. Ct. App. 2014) (Makar, J. dissenting) (attributing change from negligence to gross negligence standards in both Florida and Georgia to legislative recognition that "prescribed burning was decreasing due to liability concerns and nuisance complaints"); GA. CODE ANN. § 12-6-146(a)(5) (2025) ("[P]ressures from liability issues and smoke nuisance complaints cause prescribed burn practitioners to limit prescribed burn activity, thus reducing the above-mentioned benefits to the state."); McKay v. California, 10 Cal. Rptr. 2d 771, 772 (Cal. Ct. App. 1992) (affirming recovery for business losses caused by negligently set prescribed burn). An Australian literature review found

land that required burning once every four years (about half the state's land area), but that only 404,685 hectares of the necessary 2,284,076 hectares were burned.[48] While from the government's perspective there are not enough prescribed burns, neighbors and those experiencing greater air pollution might disagree.[49] The federal Healthy Forests Restoration Act of 2003 encourages prescribed burns to reduce the effects of wildfires.[50] Some states have legislative findings that prescribed burning should be encouraged.[51]

There is little question today that fire has a crucial role to play in land management. As Stephen Pyne notes, the question is not whether to use fire, but practical questions: "When? How frequently? At what cost? And what about air quality and liability for escapes? How should fire restored (or maintained) interact with other practices?"[52]

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that authors from different disciplines varied in their support for prescribed burns with roughly 85% of land management papers supporting it compared to only 48% of ecology papers. Imma Oliveras & Tina Bell, *An Analysis of the Australian Literature on Prescribed Burning*, 106 J. FORESTRY 31, 31 (2008).

[48] John R. Weir, *Are Weather and Tradition Reducing Our Ability to Conduct Prescribed Burns?*, 33 RANGELANDS, 25, 27–28 (2011). To meet the target would require 10,288 hectares to be burned on each of the 222 burn days generally available there. *Id.* at 28. Since most burning is done only between February and April, there are only forty-eight total burn days available most years, requiring almost five times more (47,691 hectares) to be burned each day. *Id.* As the author notes, the impact of the fire and smoke on the population would be considerable. *Id.*

[49] In a study focused on the Australian context, the authors noted that increasing the number of large-scale burns

> appears to provide an easy solution to the intractable problem of bushfires. Increasing targets on public land in most Australian states/territories involves a single instruction to the single government agency in charge of public land management. Responsibility for implementing these increased targets then falls to the government agency, alleviating other levels of government, agencies, and individuals of their own responsibilities.

Danielle Clode & Mark A. Elgar, *Fighting Fire with Fire: Does a Policy of Broad-Scale Prescribed Burning Improve Community Safety?*, 27 SOC'Y & NAT. RES. 1192, 1196 (2014). By contrast, policies aimed at "changing the way we live in fire-prone environments are expensive and complex." *Id.* at 1197. Such policies require coordination across levels of government and among agencies and demand "significant political leadership." *Id.*

[50] 16 U.S.C. § 6501.

[51] FLA. STAT. § 590.125(3)(a)(7) (2024) ("As Florida's population . . . grow[s], pressures from liability issues and nuisance complaints inhibit the use of prescribed burning."); Costanza & Moody, *supra* note 25, at 2 (Florida, Georgia, Louisiana, Mississippi, and North Carolina have "legislation that . . . recognizes prescribed burning as a beneficial activity"); Jonathan Yoder et al., *Economics and Prescribed Fire Law in the United States*, 25 REV. AGRIC. ECON. 218, 230 (2013) [hereinafter Yoder et al., *Economics and Prescribed Fire*] ("A new generation of prescribed fire statutes has been developed in the southeastern states beginning with Florida in 1990. The Florida statute . . . recognize[s] prescribed burning as a useful land management tool.").

[52] PYNE, BETWEEN TWO FIRES, *supra* note 2, at 104.

III. EXISTING LEGAL REGIMES

The problem of prescribed burning as a land management strategy has three components. First, there are unintended third-party negative effects for which compensation is desirable. These are not common (based on existing evidence) but may be catastrophic. Second, fear of liability for such effects deters potential burns from occurring. Third, the science of burning requires greater development, both to improve the effectiveness of burns and to reduce the third-party impacts.

The first legal approach to solving these problems was the use of tort law with varying degrees of liability to incentivize burners, their neighbors, and passers-by to take appropriate levels of care.[53] When this unsurprisingly failed to satisfy the often-contradictory demands of burners and their neighbors, states layered regulatory schemes on top of tort liability.[54] This is where most states' legal burn regimes are today. But these hybrid regimes address only some of the components of the problem, they do so poorly, and at a high cost to those individuals unlucky enough to experience a catastrophic escape or other unintended consequences and to be sued for permitting such an escape to occur. The next two Sections discuss these regimes and their evolution.

A. Tort Liability

Prescribed burns can harm neighboring properties and people on those properties or on adjoining public roads. One of the most important risks is fire escape: if a prescribed burn escapes containment and causes damage to neighboring properties (burning fences, structures, crops, or timber) tort principles will generally hold the burner liable for those losses if the burner has failed to meet the standard of care imposed by the relevant tort law.[55] The other is smoke impact—particularly when it drifts

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[53] *See generally* Daniel P. Kessler, *The Economic Effects of the Liability System*, HOOVER INST. (June 1, 1999), https://www.hoover.org/research/economic-effects-liability-system [https://perma.cc/P2PU-YNZL] (explaining that liability rules both compensate the injured and deter negligence by internalizing accident costs, inducing would-be injurers to take optimal care).

[54] *See infra* Section III.B.

[55] *See, e.g.*, Leuteneker v. Fisher, 317 P.2d 143, 143–44 (Cal. Ct. App. 1957) (upholding negligence finding where burner lit piles under live trees, causing "a spectacular burn"); *Shuler*, 139 So. 3d 914, 915 (Fla. Dist. Ct. App. 2014) (affirming award of $741,496 for escaped fire that destroyed timber on neighboring property); Am. Fam. Mut. Ins. Co. v. Am. Nat'l Prop. & Cas. Co., 370 P.3d 319, 324 (Colo. App. 2015) (noting post-burn high winds carry embers that ignite major wildfire "resulting in loss of life and significant property damage."). Some injured parties have (unsuccessfully) attempted to use nuisance as a basis for a claim. *See, e.g.*, Banks v. Corte, 521 So. 2d 960, 961–62 (Ala. 1988).

onto highways, and accidents and health injuries result.[56] Liability risks are a key reason why landowners choose not to use prescribed burns.[57]

The baseline common-law rule in most states is a negligence standard: a landowner or agent conducting a burn must use "reasonable care."[58] If not, liability for harm can follow,[59] and a nuisance or trespass claim may arise (smoke or fire coming uninvited onto another's property).[60] Crucially, "rigorously following the mandatory requirements

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[56] *See, e.g.*, Miley v. Continental Ins. Co., 645 So. 2d 1166, 1167 (La. Ct. App. 1994) (describing the $4,300,000 settlement that occurred after smoke caused two multi-vehicle crashes, which resulted in three deaths, six injuries, and significant property damage); Elton v. Anheuser-Busch Beverage Grp., Inc., 58 Cal. Rptr. 2d 303, 307 (Cal. Ct. App. 1996) (finding escaped prescribed burn constituted trespass onto neighbor's land).

[57] Carissa L. Wonkka, William E. Rogers & Urs P. Kreuter, *Legal Barriers to Effective Ecosystem Management: Exploring Linkages Between Liability, Regulations, and Prescribed Fire*, 25 ECOLOGICAL APPLICATIONS 2382, 2383 (2015); Terry K. Haines, Rodney L. Busby & David A. Cleaves, *Prescribed Burning in the South: Trends, Purpose, and Barriers*, 25 SO. J. APPL. FORESTRY 149, 152 (2001); Jonathan Yoder, David Engle & Sam Fuhlendorf, *Liability, Incentives, and Prescribed Fire for Ecosystem Management*, 2 FRONTIERS ECOLOGY & ENV'T 361, 364 (2004); Yoder, *Liability, Regulation, and Endogenous Risk*, *supra* note 44, at 299; C. Sun & B. Tolver, *Assessing Administrative Laws for Forestry Prescribed Burning in the Southern United States: A Management-based Regulation Approach*, 14 INT'L FORESTRY REV. 337, 338 (2012); David Toledo et al., *To Burn or Not to Burn: Ecological Restoration, Liability Concerns, and the Role of Prescribed Burning Associations*, RANGELANDS, April 2012, at 18, 21; Stephen McCullers, Note, *A Dangerous Servant and a Fearful Master: Why Florida's Prescribed Fire Statute Should be Amended*, 65 FLA. L. REV. 587, 592 (2013) ("[P]rescribed fire practitioners view potential liability as the biggest obstacle to using prescribed fire.").

[58] *See, e.g.*, Morgan Russell et al., *Legal Barriers to Prescribed Burning*, TEXAS A&M AGRILIFE EXTENSION, Jan. 2022, at 2, https://agrilife.org/westtexasrangelands/files/2023/08/Legal-barriers-to-prescribed-burning.pdf [https://perma.cc/JBD3-SH6C] (simple negligence rule "[r]equires the burner to practice reasonable care during a prescribed burn").

[59] Washington has a statute that defines the cause of action for a fire that spreads to a neighboring property:

> [I]f any person shall for any lawful purpose kindle a fire upon his or her own land, he or she shall do it at such time and in such manner, and shall take such care of it to prevent it from spreading and doing damage to other persons' property . . . and if he or she fails so to do he or she shall be liable in an action . . . to any person suffering damage . . . to the full amount of such damage.

WASH. REV. CODE § 4.24.040 (2025). The Washington courts have held this is the "same duty" as the common law applies for non-deliberately caused fires. Schmierer v. Weishaar, No. 18230–4–III, 2000 WL 255704, at *1–2 (Wash. Ct. App. Mar. 7, 2000). After surveying some early fire damage cases, the Washington Court of Appeals concluded that "[t]he common factor . . . is that the issue of whether the steps taken under the prevailing conditions satisfied the reasonable care standard is a question of fact which is properly decided by a jury." *Id.* at *4. Note that burns conducted by federal agencies, notably the U.S. Forest Service, are generally exempt from suit because prescribed burning is a discretionary act under the Federal Tort Claims Act's discretionary function exception; even when the exception does not apply, liability turns on the state's negligence law. *See* Elias Kohn, *Wildfire Litigation: Effects on Forest Management and Wildfire Emergency Response*, 48 ENV'T. L. 585, 594–596, 611 (2018) ("When the discretionary function exception is not triggered, the FTCA applies state negligence laws.").

[60] Bill Cary, Jamey Lowdermilk & Jennifer Fawcett, PRESCRIBED FIRE LIABILITY REPORT FOR THE SOUTHERN UNITED STATES: A SUMMARY OF STATUTES AND CASES 7 (Apr.

of the state law while engaging in prescribed burning activities does not exempt the prescribed burner from liability. The question of whether or not the prescribed burner was negligent will determine the ultimate question of liability. This question is . . . for the jury to determine based on the particular set of facts and circumstances which are revealed during the court proceeding."[61]

Whether or not noncompliance with a required burn plan constitutes negligence per se or evidence of negligence can be an issue.[62] For example, the Iowa Supreme Court held that "reasonable minds could differ" (and so the issue was left to the jury) in a case where a burn plan was created, the fire chief gave the go-ahead to light the fire, there were people on hand with fire suppression tools, and a firebreak had been created but the burner had not complied with all aspects of the burn plan.[63] Some prescribed burns may cause harm even if well-planned and well-executed. A well-planned fire can be carried by unexpected winds or spot over firebreaks, turning into a wildfire.[64] In an attempt to clarify the rules, some states have statutes governing specific burning practices that establish a standard of care implicitly or explicitly.[65] Under a negligence standard, those engaged in prescribed burns face considerable legal uncertainty over their potential liability should the fire cause injury to

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2022), https://serppas.org/media/kckh3lww/prescribed-fire-liability-report-for-the-southern-united-states_a-summary-of-statutes-and-cases.pdf [https://perma.cc/TDA7-UQR2] (discussing potential nuisance liability); Ream v. Keen, 828 P.2d 1038, 1038 (Or. Ct. App. 1992) (finding smoke as trespass).

61 Eshee, *supra* note 46, at 130.

62 *See* Scheele v. Rains, 874 N.W.2d 867, 872 (Neb. 2016).

63 *Id.* at 872–73.

64 A group of insurers whose insureds were injured by a major fire caused by wind-blown embers attempted an inverse condemnation claim against the public entities and their insurer that had conducted the prescribed burn that produced the embers. *Am. Fam. Mut. Ins. Co.*, 370 P.3d 319, 320 (Colo. App. 2015). Their claim failed because the court found no public purpose existed for the damage to their insureds' property by the escaped fire, since the purpose of the prescribed burn did not include starting a wildfire. *Id.* at 327–28.

> The public purpose of an intended act (the prescribed burn) that ultimately results in an unintentional taking (the wildfire) does not transfer to and supply the 'public purpose' for that taking. Stated differently, merely showing that the taking was the direct, natural, or probable consequence of the state's intended act does not necessarily establish that the taking was for a public purpose.

Id. at 328. A North Carolina decision rejected a defense to criminal charges for negligently causing a fire when a prescribed burn negligently led to a forest fire on an adjoining property. North Carolina v. Hewitt, 484 S.E.2d 844, 845 (N.C. Ct. App. 1997). The defendant argued that since he had deliberately set the prescribed burn, he did not negligently start a fire as the statute under which he was charged required. *Id.* The court dismissed this argument because "while defendant's first fire was set intentionally, it was the *second* fire, the large wildfire which defendant negligently caused by leaving a smoldering stump, which was the basis for his being charged and convicted under [the statute]." *Id.* (emphasis in original).

65 *See* Patton v. Cumberland Corp., 819 S.E.2d 898, 902 (Ga. Ct. App. 2018) (seeking "to create liability based on the failure to remain on site to monitor the controlled burn until it was completely extinguished. This is not what the statute requires").

others.[66] A survey of southern plains landowners concluded that addressing landowners' "potentially unfounded" perception that prescribed burns are "highly risky" is important and careful analysis of legal regimes is necessary to see whether they discourage participation.[67] When government agencies conducted burns, the impact of *ex post* investigations on careers also operated as a deterrent, which led to more bureaucratized procedures that limited burning.[68] By contrast, one private landowner played a key role in advancing prescribed burning on the vast acreage it controlled: The Nature Conservancy (TNC). From burning just a few acres in the 1960s, its later acquisition of both upper Midwest prairie that needed regular burning to sustain it and large Florida acreage enabled it to assume a leading role.[69] As a private landowner "it could avoid the controversies over land use that paralyzed the federal agencies."[70] Its holdings tended to be in "landscapes inhabited by people already doing burning" so that "there was no need to argue for prescribed fire, only to shape its application, and there was no clash over nonanthropogenic values, since the issue was not to exclude people but to regulate them."[71] Finally, TNC emphasized ecological reasons for burning.[72]

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[66] Jonathan Yoder et al., *The Economic Logic of Prescribed Burning Law and Regulation*, 56 J. RANGE MGMT. 306, 309–12 (2003) (discussing impacts of uncertainty). Cleaves & Haines, *Regulation and Liability Risk*, *in* ENVIRONMENTAL REGULATION & PRESCRIBED FIRE: LEGAL AND SOCIAL CHALLENGES, *supra* note 27, at 181 ("In all states, the law of general liability, as codified in statutory law, case law, and administrative rules, is a source of complexity and uncertainty.").

[67] Kreuter et al., *Landowner Perceptions*, *supra* note 30, at 966.

[68] PYNE, BETWEEN TWO FIRES, *supra* note 2, at 180 ("It was a bold fire officer, however, who willingly pushed the prescription and risked becoming the next subject of an intensive inquiry into the nation's next infamous escape. Part of a fire's written prescription was the record and resume stored in a personnel file."). One consequence was demand for models—even for models that were not particularly accurate in the field—as "[p]rescribed fires, prescribed natural fires, wildfires—all demanded judgments based on what the fires were expected to do, and if those choices could be validated by a mathematical model, then they might withstand legal and public challenges better than the intuition of a veteran who had watched flames run up and down the same canyon for 30 years." *Id.* at 125. Even worse, when the Thirtymile fire in Washington state in 2001 caused several deaths, the incident commander was criminally charged with four counts of involuntary manslaughter and seven counts of lying to investigators. *Id.* at 369 ("This was a turn toward accountability—the criminalization of poor judgment in inherently chancy settings—that neither the GAO nor the agencies foresaw or desired. It told every incident commander that a fatality might lead to felony charges. It told every prescribed burner that, as one fire-management officer put it, he went to work knowing that a wind shift might land him in jail.").

[69] *Id.* at 213. *See also* Stephanie B. Gebauer, *Changes in Prescribed Burning Policies and Public Perception in New York State*, *in* ENVIRONMENTAL REGULATION & PRESCRIBED FIRE: LEGAL AND SOCIAL CHALLENGES 158, 159–60 (Dana C. Bryan ed., 1997) (attributing change in New York state law to permit burns to "nearly 30 years of extensive education efforts by The Nature Conservancy, New York State Department of Environmental Conservation and a citizen group").

[70] PYNE, BETWEEN TWO FIRES, *supra* note 2, at 215.

[71] *Id.* at 401.

[72] *Id.* at 213–14.

To reduce such uncertainty and encourage burning, some states have enacted laws raising the standard for liability to gross negligence, meaning a burner is liable only if they act with extreme carelessness or willful disregard for safety.[73] Florida moved in 1977 to provide a legal regime for public authorities' burning, even allowing the state forestry agency to burn private land if the landowner was unable or unwilling to do so.[74] When the Florida Supreme Court ruled private burners could be sued, the Florida legislature passed "perhaps the most remarkable fire statute ever authorized in the [U.S.]" that not only shifted the liability standard to gross negligence, but also identified burning as a property right.[75]

[73] *See, e.g.*, GA. CODE ANN. § 12-6-148(b) (2025) ("No property owner or owner's agent conducting an authorized prescribed burn under this part shall be liable for damages or injury caused by fire or resulting smoke unless it is proven that there was gross negligence in starting, controlling, or completing the burn."). There has been a change in the framework for thinking about fire's role as having occurred first at the U.S. Forest Service (1970s–1995) and then among private (1997–present) and tribal (1975–1995) landowners. Michelle M. Steen-Adams, Susan Charnley & Mark D. Adams, *Historical Perspective on the Influence of Wildfire Policy, Law, and Informal Institutions on Management and Forest Resilience in a Multiownership, Frequent-fire, Coupled Human and Natural System in Oregon, USA*, ECOLOGY & SOC'Y, Sep. 2017, at 4.

[74] PYNE, BETWEEN TWO FIRES, *supra* note 2, at 207.

[75] *Id.* at 208.

Gross negligence standards immunize burners from ordinary negligence claims,[76] shifting some risk to prescribed burners' neighbors.[77] Some states have prescribed fire statutes holding that a burner using due care (and meeting any certification or notice requirements) will only be liable upon proof of gross negligence or willful misconduct.[78] Scholars credit this grant of immunity with enabling robust burning programs—e.g., over 2 million acres per year are authorized to burn in Florida under

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[76] For example, Georgia statutorily defines "gross negligence" as the absence of "that degree of care which every man of common sense, however inattentive he may be, exercises under the same or similar circumstances." GA. CODE ANN. § 51-1-4 (2025). The courts have interpreted this as "equivalent to the failure to exercise even a slight degree of care or lack of the diligence that even careless men are accustomed to exercise." Pottinger v. Smith, 667 S.E.2d 659, 661 (Ga. Ct. App. 2008) (citations omitted); *see* Newton v. Jacobs, 854 S.E.2d 359, 364–65 (Ga. Ct. App. 2021) (finding no gross negligence even assuming "the fire was started on a high fire danger day, that the wind was blowing at nine miles per hour. . . and that [defendant] misunderstood the effect of humidity on fire behavior." Rather, adequate personnel nearby, fire breaks cut on all sides, an assessment of wind direction, and an ignition point chosen based on wind direction were all enough to show at least "slight diligence"). California allows a greater range of damages for fires caused "willfully, negligently, or in violation of law." CAL. HEALTH & SAFETY CODE § 13007 (West 2025). This applies to negligently conducted prescribed burns. *McKay*, 10 Cal. Rptr. 2d 771, 772 (Cal. Ct. App. 1992). Florida's burn law includes a list of specific provisions concerning what constitutes proof of particular conditions:

> a. Fire spreading outside the authorized burn area on the day of the certified prescribed burn ignition does not constitute conclusive proof of inadequate firebreaks, insufficient personnel, or a lack of firefighting equipment.
>
> b. If the certified prescribed burn is contained within the authorized burn area during the authorized period, a strong rebuttable presumption shall exist that adequate firebreaks, sufficient personnel, and sufficient firefighting equipment were present.
>
> c. Continued smoldering of a certified prescribed burn resulting in a subsequent wildfire does not by itself constitute evidence of gross negligence under this section.

FL. STAT. § 590.125(3)(b)(5)(a)–(c). The statute originally did not include this language, leading to calls for clarifying amendments. McCullers, *supra* note 57, at 593.

[77] Wonkka, Rogers & Kreuter, *supra* note 57, at 2390 ("Gross negligence standards shift some costs of burning associated with escapes from the burner to the adjacent property owners."); *see Newton*, 854 S.E.2d at 363 (Ga. Ct. App. 2021) (concluding the legislature "clearly contemplated that an authorized prescribed burn could escape the area intended to be burned" and intended to protect burners from liability "even if the fire which was intended to be confined to a predetermined area escapes the area").

[78] Lenya Quinn-Davidson, *Science Tuesday: What's Your State's Prescribed Fire Liability Law?*, FIRE ADAPTED COMTYS. LEARNING NETWORK (Feb. 28, 2017), https://fireadaptednetwork.org/science-tuesday-whats-your-states-liability-law/ [https://perma.cc/Q6L9-2LSH] (listing Florida, Georgia, Michigan, and Nevada). The Southeast sees high use of prescribed burns and "the largest land area in the WUI" making burning challenging. Costanza & Moody, *supra* note 25, at 2. Unsurprisingly, southeastern states adopted liability limits for trained professionals engaged in prescribed burning, beginning with Florida in 1990. *Id.*

the Prescribed Burn Act.[79] By contrast, states without clear statutes have "uncertain liability" that chills landowner willingness to burn.[80]

The liability rule difference has practical significance: under a gross negligence rule, if a prescribed burn escapes despite the burner following best practices, the burner is generally not liable for resulting damage, whereas under a simple negligence rule the burner could be liable if a court finds any lack of reasonable care (even a small lapse in judgment).[81] These liability standards, along with any state-prescribed burning statutes, shape the tort risk that private burners face. A study comparing counties across state lines found both more prescribed burns and greater areas burned (9.72% more) in those with a gross negligence standard compared to those with a negligence standard.[82] A few states use a strict liability standard for burn damage, putting the risk of loss on the burner regardless of the burner's negligence—though there is little agreement just which states have adopted this standard, casting doubt on how rigorously it could be applied.[83]

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[79] *See Prescribed Fire in Florida*, FLA. DEP'T OF AGRIC. & CONSUMER SERVS., https://www.fdacs.gov/Forest-Wildfire/Wildland-Fire/Prescribed-Fire [https://perma.cc/UZ7A-36ME] (last visited Sep. 30, 2025) (providing that on average, the Florida Forest Service authorizes public and private parties to prescribe burn more than 2.1 million acres).

[80] Quinn-Davidson, *supra* note 78; *see also* Costanza & Moody, *supra* note 25, at 13 (suggesting gross negligence statutes may help encourage prescribed burns); sources cited *supra* note 30 (explanatory parenthetical required).

[81] *See, e.g.*, Morgan v. Horton, 707 S.E.2d 144, 154 (Ga. Ct. App. 2011) (finding summary judgment for defendant appropriate); Wolfe v. Carter, 726 S.E.2d 122, 126–27 (Ga. Ct. App. 2012) (finding leaving a fire "reasonably confined" was sufficient and burner not required to ensure it was extinguished to meet gross negligence standard). The court noted that

> [i]t is undisputed that Carter conducted test burns before starting the prescribed burn on January 12 to ensure that the smoke would not blow across the highway. He remained on the premises until no flames were visible and only a light smoke remained. Moreover, no evidence exists that any further fire or heavy smoke resulted, which might have necessitated further action on Carter's part.

Id. at 127. The court also noted the burner's twenty-five years of experience in the forestry industry and certification as a prescribed burner. *Id.* at 124 n.3.

[82] Wonkka, Rogers & Kreuter, *supra* note 57, at 2387.

[83] Some sources list Delaware, Hawaii, Minnesota, Pennsylvania, Rhode Island, and Wisconsin as providing strict liability for prescribed burns. *See, e.g.*, Quinn-Davidson, *supra* note 78. These references trace back to a 2006 article that concluded there was strict liability in these states based on language making it a criminal offense to fail to keep a permitted fire contained within the area the permit described. Sun, *supra* note 3, at 394–95. The author (who is not a lawyer) concluded that

> [t]hese regulations and statutes clearly express a high possibility of liability assignment on forest landowners if there is any damage from escaped fires. For the purpose of this study, these codes were interpreted as strict liability tort rules, or very close to strict liability rules because of the heavy liability burdens imposed on landowners.

Id. I am skeptical of this conclusion and have not found independent confirmation of the imposition of strict liability in tort for prescribed burns in all but one of these states. As Haines and Cleaves noted, "[c]riminal negligence is not a prerequisite for civil liability; avoiding civil negligence actually requires greater care than is necessary to avoid criminal

negligence." Terry K. Haines & David A. Cleaves, *The Legal Environment for Forestry Prescribed Burning in the South: Regulatory Programs and Voluntary Guidelines*, 23 S. J. APPLIED FORESTRY 170, 173 (1999) [hereinafter Haines & Cleaves, *Prescribed Burning in the South*].

Delaware law provides that "[w]hoever willfully or maliciously sets fire to any woodlot, forest, wild land, property, material or vegetation being or growing upon the lands of another shall be fined not less than $200, nor more than $5,000, or imprisoned not more than 2 years, or both." DEL. CODE ANN. tit. 3, § 1041(a) (2025). It also provides that they shall be liable to the state for expenses "incurred in combating and extinguishing such fire," but does not explicitly specify strict liability. *Id.* § 1046.

Hawaii makes the setting of a fire "wilfully, maliciously, or negligently which burns property not owned, leased, or controlled by the person" a misdemeanor. HAW. REV. STAT. § 185-7(c) (2025). This suggests a negligence standard for prescribed burns (at least, for non-malicious ones and it seems unlikely a permit would be granted for a malicious one). *But see* McCullers, *supra* note 57, at 603 ("During the 1970s and 1980s there appeared to be a trend toward strict liability for harm caused by prescribed fire" which was reversed in the 1990s).

Minnesota law treats a fire that "spreads to and damages or destroys property belonging to another" as "prima facie evidence of negligence . . . ." MINN. STAT. § 88.75(1)(c) (2025). This is a curious way to impose strict liability; it is implied that negligence can be rebutted. Sun also notes that Minnesota classifies as misdemeanors the failure to: (1) confine a fire to the permitted area or (2) restrict to the materials listed in the permit, stating "[t]hese criminal charges are clear indication[s] of civil liability." Sun, *supra* note 3, at 394. This is incorrect—a conviction may be considered evidence of negligence, but the existence of a misdemeanor offense does not carry with it strict liability in tort.

Sun again relies on misdemeanor offenses for escaped burns. Sun, *supra* note 3, at 394. Pennsylvania adopted legislation in 2009 (after Sun's article) to encourage prescribed burning, including a negligence standard and providing that statutory compliance would be "admissible evidence that the duty of care for such activity has been met." PA. CONS. STAT. § 425.11 (2009). As such, "[t]he General Assembly declare[d] that prescribed burning is a land management tool that benefits the safety of the public, the environment and the economy of this Commonwealth." *Id.* § 425.2. It is possible that Pennsylvania's 1971 prohibition on open burning (from which the 2009 statute exempted prescribed burns) is the source of Sun's conclusion, as it banned open burning generally. It did exempt "a fire set in conjunction with the production of agricultural commodities in their unmanufactured state on the premises of the farm operation" and fires for "the prevention and control of disease or pests, when approved" by the state. 25 PA. CODE § 129.14(c)(3)–(4) (1971). Again, this appears to be a stretch to classify this as strict liability.

I could find nothing to suggest Rhode Island applies strict liability to prescribed burns. The State Department of Environmental Management conducts prescribed burns. *See, e.g.*, *DEM Announces it Will Increase the Use of Prescribed Burns in 2023 to Help Restore Native Ecosystems Overrun by Invasive Plants, Protect Rural Property from Wildfires*, NARRAGANSETT BAY RSCH. RSRV., http://nbnerr.org/coastal-clean-up-2/ [https://perma.cc/YCK5-Z78E] (last visited Oct. 9, 2025). Wisconsin has something approaching strict liability for causing forest fires and even provides double damages if the fire "occurred through willfulness, malice, or negligence." WIS. STAT. § 26.21(1) (2025).

Interestingly, Yoder et al. conclude that the four states imposing strict liability (as of 2001) were Connecticut (albeit with a contributory negligence defense), North Dakota, New Hampshire, and Oklahoma—a set with zero overlap with Sun's analysis. Yoder et al., *Economics and Prescribed Fire*, *supra* note 51, at 226. Yoder et al. argue that strict liability is efficient only when "the victim has little influence over damage to his own property, if the probability of damage is very low, or the costs of damage abatement are high" and so conclude strict liability is efficient only where the use of prescribed burns is rare. *Id.* at 221. They note that in all but New Hampshire, the strict liability laws are 19th century statutes. *Id.* at 227. New Hampshire's was enacted in 1995, possibly based on an earlier statute

The classic law-and-economics analysis of negligence and strict liability regimes suggests that a negligence regime incentivizes the injurer in the case where the victim cannot influence the risk of harm to consider the level of care (so as to avoid liability by exceeding it) but not the level of activity, while strict liability incentivizes consideration of both by the potential injurer.[84] Both too much and too little prescribed burning present risks (the latter from the buildup of fuel). Because "[n]either the landowner nor the burn contractor can be held liable under statutory law for their contributions to fuels that increase future wildfire severity," a legal regime focused on liability from burns alone is unlikely to lead to the correct balancing of costs and benefits.[85]

Steven Shavell's canonical account of the incentives created by the two regimes suggested that negligence is used because courts would struggle to apply a rule requiring them to consider whether the injurer had engaged in too much of the activity that caused the harm, because making this assessment would require them to "likely . . . know much more than would normally have to be known to decide whether care . . . was adequate."[86] Shavell concluded that strict liability was appropriate in areas where two conditions exist.[87] First, "the injurer activity has a

imposing strict liability on railroads for sparks from locomotives. *Id.* Yoder re-estimated his empirical test using Sun's characterizations of state laws and, oddly, found no change to his results. Yoder, *Liability, Regulation, and Endogenous Risk*, *supra* note 44, at 320. This is puzzling given the relatively large and statistically significant impact the classifications for strict liability had on escapes and damages. *Id.* 300–04 (describing the further development of the model). Rather than indicating robustness, this suggests to me that the strict liability finding is being driven by something other than which states are recorded as having strict liability. Finally, Cleaves and Haines list Arkansas, North Carolina, Oklahoma, Texas, and Virginia as strict liability states, overlapping with Yoder et al. only on Oklahoma and not at all with Sun. Cleaves & Haines, *Regulation and Liability Risk*, *in* ENVIRONMENTAL REGULATION & PRESCRIBED FIRE: LEGAL AND SOCIAL CHALLENGES, *supra* note 27, at 172. If nothing else, the confusion over which states follow strict liability for prescribed burns suggests liability rules are not clear.

[84] *See* Steven Shavell, *Strict Liability Versus Negligence*, 9 J. LEG. STUD. 1, 14 (1980) (claiming outcome is not efficient because sellers escape liability if nonnegligent, resulting in an output that is too high). Note that Shavell is analyzing a case where the injurer is selling a good or service to the victim and thus incorporates the cost of the injurer's expected liability into the price of the good or service. *Id.* The victims of prescribed burn-caused injuries are not buying anything from the burner, but the point holds that some injuries caused by the burn will not be considered by the burner (the non-negligently caused ones), as the burner will not be liable for these.

[85] Costanza & Moody, *supra* note 25, at 12; *see also* Yoder et al., *Economics and Prescribed Fire*, *supra* note 51, at 230 (noting that a few states impose statutory requirements on forest owners to reduce excessive fuel loads: Montana, Minnesota, New Mexico, and Washington); N.J. REV. STAT. § 13:9–44.15(5)(d) (2025) (demonstrating how New Jersey allows the state to conduct a burn on private land and bill the landowner where there is a "wildland fuel hazard that poses an extraordinary threat to life, property, or a natural resource"); *but see* Costanza & Moody, *supra* note 25, at 12 (noting that public agencies sometimes do consider potential liability from not burning, where the failure interferes with habitat requirements mandated by the Endangered Species Act);.

[86] Shavell, *supra* note 84, at 23.

[87] *Id.* at 24.

distinctive aspect (which makes the activity easy for the law to single out) and imposes nonnegligible risks on the victims (which make the activity worthwhile controlling)."[88] Second, the victim activity "is usually not at all special . . . [and is] typically routine in nature, part of what it is to carry on a normal life," and "is therefore activity that cannot and ought not be controlled."[89]

Choosing a tort rule (negligence, gross negligence, or strict liability) to get the right incentives is relatively straightforward in the confines of a model. Most prescribed burns are likely to fall within the two conditions Shavell derived for strict liability.[90] Setting deliberate fires has sufficient "distinctive aspects" to be singled out and the potential victims (neighboring landowners and passersby) both experience nonnegligible risks. Further, their activities have far less to do with the level of risk imposed on them than does the injurers' activities.[91] Realistic fact scenarios make negligence harder to assess, adding uncertainty to a burner's expected liability.[92] Another complication is determining the right method of calculating damages.[93] Abstracting from these difficulties, the model favors strict liability because both the level of care (how the burn is conducted) and the level of activity (how much burning to do) are key considerations for someone conducting a prescribed burn.[94]

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[88] *Id.*

[89] *Id.*

[90] *See* Yoder et al., *Economics and Prescribed Fire*, *supra* note 51, at 219, 221 (arguing that strict liability is efficient only when "the victim has little influence over damage to his own property, if the probability of damage is very low, or the costs of damage abatement are high" and so conclude strict liability is efficient only where the use of prescribed burns is rare); *id.* at 222 (concluding where both the burner and victim can affect expected damages, negligence can be efficient); *id.* at 223 (noting further, however, that once they factor in activity levels, the negligence standard produces too many fires).

[91] Neighbors do have some control over harm from prescribed burns on nearby properties. *See* Wonkka, Rogers & Kreuter, *supra* note 57, at 2390 (describing how gross negligence "can incentivize the creation of defensible space and fire-wise construction because adjacent landowners are exposed to a larger portion of the costs attendant to prescribed burning escapes than the burners under gross negligence liability standards"); Yoder et al., *Liability, Incentives*, *supra* note 44, at 300, 304 (discussing precautions by burner and neighbor and impact of liability rules on choice of how much precaution to take).

[92] For example, starting a fire under some conditions (high winds) is clearly negligent, as is failing to adequately clear a fire break along fence lines. While a jury of local ranchers might have relatively little trouble evaluating the evidence from weather records as to whether wind conditions were appropriate, the evidence about the adequacy of the fire break is likely to be more nuanced since it is unlikely there will be objective evidence of the sufficiency of the clearing along the entire fence line. Given the influx of new landowners not engaged in agriculture into many rural areas (e.g. recreational users buying ranchettes), many rural areas are likely to have juries with a mixture of experienced agricultural landowners and, if not city slickers, at least those unfamiliar with things like prescribed burns.

[93] *See, e.g.*, Evenson v. Lilley, 282 P.3d 610, 614–17 (Kan. 2012) (discussing alternative theories of damage calculation when trees are destroyed).

[94] *See* Yoder et al., *Economics and Prescribed Fire*, *supra* note 51, at 219 (describing a model favoring strict burner liability under conditions that suppose precaution effort (level of care) and mitigation and preparation efforts (level of activity)).

But this is not how the law has approached liability for prescribed burns. Instead, the movement has been toward shifting more risk onto the neighbors and passersby by raising the bar to gross negligence.[95]

This shift in the law is understandable outside the confines of a model. With respect to neighbors, most rural landowners are likely to be engaging in prescribed burns at one time or another.[96] Within agricultural and silviculture communities, sharing the burdens of prescribed burning through mutual assistance in conducting burns is often the norm.[97] Similar to Robert Ellickson's account of cattle raising and the disjunction between fencing norms and the formal law in Shasta County, California, the problems with neighbors for prescribed burns are exacerbated when the character of an area includes people uninterested in practicing agriculture or forestry.[98] Prescribed burns have third-party benefits—reduced risk of uncontrolled forest fires or grassland fires—so private landowners tend to underuse them: the benefits are diffuse, costs concentrated.[99] However, moving the standard from negligence to gross negligence shifts risks to neighbors and passersby. Because the decisions involved in conducting a prescribed burn occur on multiple margins and are often difficult to evaluate *ex post*, and because even small, random events like a gust of wind at the wrong moment can cause a fire to spread beyond its intended boundaries, determining gross negligence is not a precise calculation. In addition, the social benefits (reducing the risk of potentially catastrophic wildfires and the ecosystem benefits) do not figure in the model. Leaving matters to the tort system is thus far less an exact calibration of incentives than an economic model of liability rules suggests. Unsurprisingly, therefore, states moved to supplement tort law with regulatory regimes.

B. Adding Regulatory Regimes

Dissatisfied with the results of tort law alone—both the uncertainty it produced among prospective burners and its failure to incentivize

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[95] Interestingly, the shift toward "looser" negligence and gross negligence standards took place in the South after a period in which burn costs rose considerably and burners attributed much of the cost increase to "managing smoke and risk liability." Cleaves & Haines, *Regulation and Liability Risk*, *in* ENVIRONMENTAL REGULATION & PRESCRIBED FIRE: LEGAL AND SOCIAL CHALLENGES, *supra* note 27, at 178. At the same time, the number of acres burned fell in Arkansas, Florida, Mississippi, Texas, and eastern Oklahoma, while Georgia and North Carolina increased acreage and the remaining southern states remained stable. *Id.*

[96] Kreuter et al., *Landowner Perceptions*, *supra* note 30, at 457–58.

[97] *See, e.g.*, *id.* at 462 (finding members of burn associations more likely to participate in burns); Toledo et al., *supra* note 57, at 21–22 (noting associations "can change attitudes toward prescribed burning and enhance the social acceptability of prescribed burning as a management practice").

[98] *See generally* ROBERT ELLICKSON, ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES 29–39 (1991) (ebook) (discussing conflicts that arose between cattlemen and ranchette owners).

[99] *See infra* Part II.

prescribed burns—state legislatures began enacting statutory regimes in an attempt to clarify the rules and provide incentives for burning by reducing the liability risk.[100] This is surprising. As Jonathan Yoder notes, "the movement toward more lenient liability rules for these environmental risks is in contrast to the trend away from negligence and toward strict liability for toxic pollution releases."[101] One reason may be that the occasional catastrophic outcome threatened the ability to continue burning at all. For example, catastrophic fires can lead to public demands for restrictions on burning, illustrating the importance of a proactive approach to the issue; in 1989, an escaped prescribed farm burn in Georgia ignited a peat fire along I-75 that "smoked in" the highway for several weeks "while the state legislature was in session. The governor demanded action and legislators quickly introduced a bill to ban all open burning."[102] Prescribed burners mobilized and defeated the bill and obtained a law encouraging burning modeled on Florida's the following year.[103]

As a result, "there has been an overall trend of reducing *ex post* tort liability and increasing *ex ante* regulations in recent years."[104] For example, a comprehensive survey found that Florida had developed an extensive administrative regulatory regime for prescribed burns between 1975 and 2005, with rules covering sixteen out of twenty-eight potential regulatory areas (other southeastern states had between twelve and fourteen).[105] Much of the regulation focused on burn planning, not implementation.[106] For example, a key early step in increasing regulation

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100 *See* McCullers, *supra* note 57, at 592–93.

101 Yoder, *Liability, Regulation, and Endogenous Risk*, *supra* note 44, at 300.

102 Wade et al., *supra* note 41, at 238.

103 *Id.*

104 Sun & Tolver, *supra* note 57; *see, e.g.*, N.J. STAT. ANN. § 13:9-44.16(6)(a) ("A prescribed burn, including the smoke and ash and other air pollution deriving therefrom, conducted in accordance with the requirements of this act and an approved prescribed burn plan, shall be deemed to be in the public interest and shall not constitute arson, trespass, or a public or private nuisance.").

105 Sun & Tolver, *supra* note 57, at 342–43; *see also*, PYNE, BETWEEN TWO FIRES, *supra* note 2, at 20, 38, 85 (explaining how Florida, the "most recalcitrant core" of the "rebel region" of the Southeast, successfully resisted Forest Service pressure to adopt a fire suppression strategy and has maintained a culture of burning, playing a key role in reviving the role of fire nationally).

106 *See, e.g.*, Sun & Tolver, *supra* note 57, at 343; Yoder, Engle & Fuhlendorf, *supra* note 57, at 365 (arguing that this combination reduces costs to burners by lowering precautionary costs through the gross negligence standard but then raises them by the regulatory requirements. If the precautions improve fire safety management, "the expected liability costs to the burner will probably be much lower because of the smaller chance of being found [grossly] negligent"); Yoder et al., *Economics and Prescribed Fire*, *supra* note 51, at 228 (arguing that many of the regulatory requirements—e.g., requiring the burner to remain on site until the fire is completely extinguished—are intended to ensure that the low-cost avoider takes socially efficient precautions); *see also* Yoder, *Liability, Regulation, and Endogenous Risk*, *supra* note 44, at 305–06 (reiterating the point that "replacing liability with regulation of a subset of precautionary activities is likely to reduce the expected costs to burners of an escaped fire").

was the passage of certified burner requirements, the result of an alliance between "people concerned with forest production and environmental protection" working together to pass laws "which recognized the ecological necessity and mutual benefits of maintaining a strong burning program."[107] Planning steps are verifiable and fit into an existing land use regulatory regime built for permitting and approvals.

Landowners generally must comply with various state regulatory requirements when conducting burns that aim to reduce the harm to third parties from burns.[108] For example, in Florida, a burn must be approved by the Florida Forest Service and a burn plan filed, or the heightened gross negligence standard will not apply.[109] These regulatory

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[107] *See* Haines & Cleaves, *Prescribed Burning in the South*, *supra* note 83, at 173. A similar coalition produced Florida's 1990 statute, whose origins were briefly described by a representative of the Nature Conservancy and Disney Wilderness Preserve as the result of "increasing scrutiny" during the 1970s and 1980s of the use of prescribed fire. Steven Gatewood, *How the Florida Prescribed Burning Act Was Passed*, *in* ENVIRONMENTAL REGULATION & PRESCRIBED FIRE: LEGAL AND SOCIAL CHALLENGES 155 (Dana C. Bryan ed., 1997) ("It was perceived that new restrictions contemplated by regulatory agencies could effectively eliminate prescribed fire as a management tool in the landscape."). In 1989 a "coalition of agencies, organization[s], and individuals" drafted a bill, secured sponsors, and lobbied for the legislation. *Id.* The leaders of the coalition were The Nature Conservancy, the Florida Division of Forestry, and the Florida Forestry Association. *Id.*

[108] *See, e.g.*, ALA. CODE § 9-13-273 (2025) (indicating that a person who conducts a burn is not liable for the damage or injury caused by the burn unless they fail to act with the required degree of care); ARK. CODE ANN. §§ 20-22-303, 18-60-103 (2024) (discussing when a party can bring suit to recover damages from a burn); FLA. STAT. § 590.125 (2025) (establishing the conditions under which a burn can occur and if the conditions are followed, liability for damages and injury is not imposed unless grossly negligent); GA. CODE ANN. § 12-6-148 (2025) (establishing the conditions under which a burn can occur and if the conditions are followed, liability for damages and injury is not imposed unless grossly negligent); KY. REV. STAT. ANN. §§ 149.375, 149.175 (West 2025) (establishing conditions that must be followed for burns); LA. STAT. ANN. § 3:17 (2025) (showing the condition burns must be conducted under and if those conditions are followed, then a rebuttable presumption of non-negligence exists); MISS. CODE ANN. § 49-19-307 (2024) (stating that no liability is imposed for damage or injury from burns that follow the requirements unless negligence is proven and then it lists the requirements to be followed); N.C. GEN. STAT. § 106-967 (2025) (establishing that civil liability will not be imposed for any damage or injury from the burn unless done in gross negligence); OKLA. STAT. tit. 2, § 16-28.2 (2025) (stating the requirements to conduct a burn and the liability included with conducting said burn); S.C. CODE ANN. § 48-34-50 (2025) (establishing that no liability will be imposed for damage, injury, or loss, except for smoke, resulting from a burn conducted according to requirements unless negligence is proven); TENN. CODE ANN. § 11-4-1003 (2025) (requiring a showing of negligence by the burner to be liable); TEX. NAT. RES. CODE ANN. §§ 153.081–153.083 (West 2025) (limiting liability from prescribed burning); VA. CODE ANN. § 10.1-1150.5 (2025) (establishing the limits of liability for burners); Eshee, *supra* note 46, at 130 (noting that commentary in agricultural publications has sometimes emphasized that compliance with regulatory requirements will not exempt a burner from liability, which would remain a jury question).

[109] FLA. STAT. § 590.125(3)(c) (2025); *id.* § 590.125(3)(d) (failing to heed a burn ban or permit condition can not only void liability protections, but also lead to fines or misdemeanor criminal charges); Miguel Collazo III & D. Kent Safriet, *"When Fire Breaks Out": Recognizing the Inherently Dangerous Activity of Prescribed Burning in Florida*, 26 U. FLA. J.L. & PUB. POL'Y 53, 66–68 (2015) (noting that Florida amended its burn statute after the

schemes generally do not completely displace liability rules but complement them by reducing problematic burns and ensuring compensation from required insurance is available for neighbors and passersby who are injured as a result.[110] Other common regulations or guidelines include: establishing adequate firebreaks around the burn unit, having sufficient firefighting tools and water on hand, posting spotters, and only burning under certain fuel moisture and wind parameters.[111] Many states mandate that a written prescribed burn plan be prepared that details the burn objectives, the weather constraints, the personnel and equipment, and contingency plans.[112] These regulations can serve as a partial shield to liability. In Washington, for instance, if a landowner had an approved burn plan and did not deviate from it, that fact is a strong defense against being found negligent for an escape (showing the burner acted responsibly).[113] However, regulatory burdens can serve as a deterrent to participating in burns to the extent that they raise costs.

Air quality regulations govern burning: the federal Clean Air Act[114] imposes requirements on particulates and other pollutants affected by fires, states often have smoke management programs, and states recognize public health nuisances.[115] Other environmental laws may also

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verdict in *Shuler*, as the amendments "very likely intended to address the statutory interpretation issues" raised by the appellate court's decision affirming the verdict); *id.* at 68–69 (emphasizing that the net effect was to make it more difficult for adjacent landowners to successfully sue prescribed burners).

110 FLA. STAT. § 590.125(3)(b)(4) (2025); *see also* MISS. CODE ANN. § 49-19-307(4) (2024) (providing that civil or criminal liability will not be limited); Sandra Rideout & Brian P. Oswald, *Effects of Prescribed Burning on Vegetation and Fuel Loading in Three East Texas State Parks*, 54 TEX. J. SCI. 211, 224–25 (2002) (ensuring that the authorities which determine when burns are permitted are educated on the impact of conditions so burning has the greatest benefit is important). For example, a study of prescribed burns in three Texas parks concluded that county judges, the officials with the authority to issue burn bans, needed education on the importance of burns during dry periods to avoid overly restricting prescribed burns. *Id.*

111 *See, e.g.*, FLA. STAT. § 590.125 (2025) (requiring adequate personnel, equipment, and firebreaks).

112 *See, e.g., id.* (requiring a written prescription); 4 TEX. ADMIN. CODE § 228.1 (2025) (requiring written burn plan with specific elements).

113 *Liability*, MOUNT ADAMS PRESCRIBED BURN ASS'N, https://www.mtadamspba.org/liability [https://perma.cc/Z3HM-JX82] (last visited Sep. 28, 2025).

114 Clean Air Act, 42 U.S.C. §§ 7401–7671(q) (2018).

115 Haines & Cleaves, *Prescribed Burning in the South*, *supra* note 83, at 171 (Clean Air Act); *id.* at 173 (other environmental laws); Cleaves & Haines, *Regulation and Liability Risk*, *in* ENVIRONMENTAL REGULATION & PRESCRIBED FIRE: LEGAL AND SOCIAL CHALLENGES, *supra* note 27, at 168–69 (describing state and federal air quality laws that affect burning); Anjali Haikerwal et al., *Impact of Smoke From Prescribed Burning: Is It a Public Health Concern?*, 65 J. AIR & WASTE MGMT. ASS'N 592, 595 (2015) (summarizing potential health impacts). Some states explicitly provide that prescribed burns are not nuisances. *See, e.g.*, FLA. STAT. § 590.125(3)(b)(6) (2025) (prescribed burns are "considered to be in the public interest and [do] not constitute a public or private nuisance when conducted under applicable state air pollution statutes and rules"); GA. COMP. R. & REGS. 391-3-1-.02(5)(e) (requiring restrictions during periods "conducive to the formation of

impede burns—critics argue that the National Environmental Policy Act (NEPA)[116] impedes federal agencies from conducting burns, for example.[117] Moreover, "[e]ach [environmental] statute notched a point of entry for lawsuits, particularly where federal lands were involved, a legal access bolstered by the procedural complexities of [NEPA]."[118]

As a condition of burning, agencies often require burners to monitor smoke dispersion, restrict burning on days when ventilation is poor, and take other steps to mitigate smoke hazards.[119] If smoke from a prescribed fire causes accidents or health issues, a burner could face not only tort liability but also regulatory enforcement for violating smoke rules. For example, if a burn causes smoke on a highway, it is the responsibility of the burner to post flag persons on affected roads.[120] Air quality regulations can be significant barriers to burns; a survey of state forestry agencies put air pollution regulations third on the list of obstacles to expanding burns.[121]

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ozone"). Wade et al. report that Georgia restricted burning in forty-three counties surrounding Atlanta in response to EPA insistence that the state address auto emissions in Atlanta in the early 2000s. Wade et al., *supra* note 41, at 238–39; *id.* at 239 ("This policy is severely hampering efforts to restore the rare montane longleaf pine ecosystems of northwest Georgia, which require growing season burns."); *see also id.* (noting that a similar problem occurred in 2004 in the Augusta, Columbus, and Macon areas, although agricultural burns were exempted in recognition of what a state official acknowledged was due to "a more powerful lobby").

116 National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4370h (2018).

117 *See, e.g.*, Jane Jacoby, *Fighting Fire with Fire: How NEPA's Emphasis on Risk Prevents Prescribed Burns and Intensifies Wildfire*, 52 URB. LAW. 146, 162 (2023) (listing complicated and counterproductive funding mechanisms, discouragement of local involvement, and a reward of low-risk inaction over high-reward action as some of NEPA's most prominent chokeholds); PYNE, BETWEEN TWO FIRES, *supra* note 2, at 60–61 (highlighting how NEPA's environmental regulations had unintended consequential effects on the Forest Service, villainizing their approach to conservation).

118 PYNE, BETWEEN TWO FIRES, *supra* note 2, at 99.

119 *See* TEX. COMM'N ON ENV'T QUALITY, OUTDOOR BURNING IN TEXAS: FIELD OPERATIONS, RG-049 10–11, 19 (Feb. 2015), https://www.tceq.texas.gov/downloads/publications/rg/outdoor-burning-in-texas-rg-49.pdf [https://perma.cc/S5YS-54PV]; WASH. REV. CODE § 70A.15.5140 (2025) (requiring burn permits to be conditioned on complying "to the extent feasible" with air quality standards).

120 30 TEX. ADMIN. CODE § 111.219 (2025).

121 Mark A. Melvin, COAL. PRESCRIBED FIRE COUNCILS, INC., 2012 NATIONAL PRESCRIBED FIRE SURVEY REPORT 16–19 (2012); *see also,* Gregory Pelletier, *Fighting Fire with Fire: Expanding the Exceptional Events Rule to Make a Workable Solution for Prescribed Fires*, 18 J.L. ECON. & POL'Y 384, 393–94, 399–402 (2023) (explaining one possible means of loosening this constraint is to apply the Clean Air Act's "Exceptional Events Rule" to burns, allowing EPA to evaluate state implementation plans without considering the impact of the burns); Emily Williams, *Reimagining Exceptional Events: Regulating Wildfires Through the Clean Air Act*, 96 WASH. L. REV. 765, 804–09 (2021) (arguing that congress and other regulatory bodies have the power to and should change air pollution standards for smoke from wildfires and prescribed burns); Ben Richmond, *Beyond the Exceptional Events Rule: How the Local Implementation of Air Quality Regulations Affects Wildfire Air Policy*, 46 ECOL. L.Q. 343, 366–69 (2019) ("In its current form, air quality law likely stymies an appropriate level of prescribed fire."); Kirsten H. Engel, *Perverse Incentives: The Case of Wildfire Smoke Regulation*, 40 ECOL. L.Q. 623, 648–59 (2013) (discussing policy rationales

If a burn violates the rules (for example, by proceeding without a permit, or by grossly deviating from the burn plan), there can be legal consequences. Many states authorize the recovery of fire suppression costs from a negligent burner. For instance, in Washington, if a fire escapes and the state Department of Natural Resources (DNR) incurs suppression costs, the DNR can hold the landowner liable for those costs (and third-party damages) if the burner landowner was negligent.[122] Criminal penalties may apply for recklessness—failing to comply with the state's burn law can lead to bans on future permits, criminal penalties, and being charged with the state's costs in controlling the resulting fire.[123]

Texas offers a typical example of a prescribed burn statute balancing encouragement of burning with safeguards against impacts on third parties: a landowner is not liable for property damage, injury, or death caused by a prescribed burn on their land if a certified burn manager is in charge.[124] This essentially raises the standard of care to gross negligence for landowner liability, because when a certified burn manager is supervising, the statute effectively immunizes the landowner from ordinary negligence claims. Texas also extends statutory protection to those "burn bosses" (the people directing the burn) who meet certification training, experience, and insurance requirements.[125] They are not liable for damage or injury beyond the amount of insurance they are required to carry, except in cases of gross negligence or intentional misconduct.[126] In effect, the burn boss's personal liability is capped at the statutory insurance minimum (currently $1 million per occurrence) so long as they were qualified and properly insured.[127] Texas law also provides a specific shield against smoke liability: a certified burn boss is not liable for harm caused by smoke more than 300 feet from the burn.[128] This provision recognizes that smoke drift at a distance is hard to control; barring gross negligence, the law prevents claims for, say, a distant highway accident allegedly caused by a burn's smoke. Taken together, the provisions in Texas's statute mean that if a landowner hires a certified, insured burn manager and follows the prescribed burning plan on suitable land, the landowner and burn boss are largely protected from

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for different air pollution regulations for firs and ultimately concluding, "this regulatory exclusion for unplanned wildfire smoke diminishes the value of prescribed fire and wildfire managed for resource benefits in reducing the incidence and severity of unplanned wildfires").

122 *Liability*, *supra* note 113.

123 WASH. ADMIN. CODE § 332-24-217 (2025).

124 TEX. NAT. RES. CODE ANN. § 153.081(a)–(b) (West 2025) (explaining that if the landowner is a certified burn manager, there is no immunity from overseeing the landowner's own fire). Texas requires that such individuals either have another certified burn boss conduct the burn or burn as part of a burn organization to claim the protection. *Id.* § 153.083.

125 *Id.* § 153.084.

126 *Id.*

127 *Id.* § 153.082.

128 *Id.* § 153.084(b-1).

legal fallout.[129] (The insurance carried by the burn boss would still pay valid claims up to policy limits in the event of an incident—the law just prevents excess liability over those limits.)

Such legislative responses address some but not all of the problems for prescribed burning. Certification programs aim to raise the quality of burns but do not provide ongoing incentives for data collection and improving methodologies. Legal immunity statutes give landowners and burn bosses confidence to conduct burns without fear of crippling liability (as long as they comply with standards) but leave third parties at risk.[130] They set a predictable threshold for conduct. For example, Florida burners know that if they employ a certified prescribed burn manager and follow the state's requirements (permit, plan, on-site supervision, adequate precautions), they will only be held liable for gross negligence, a high bar.[131] This predictability may lower commercial insurance costs if it reassures insurers that the law will not impose liability for mere accidents or ordinary mishaps. Compensation funds aim to address the commercial insurance market problems many burners face.

C. Insurance

One trade-off of these hybrid regimes is that a third party who suffers damage has limited recourse when the burner was not grossly negligent. To balance this, some states require insurance or create funds to make sure some compensation is available even when legal liability ends.[132] Some states require prescribed burners to carry liability insurance—either as a condition to conduct the burn or to obtain the liability protection of an immunity statute. A certified and insured prescribed burn manager in Texas must maintain at least $1 million in liability coverage per occurrence (and $2 million aggregate).[133] This insurance is a prerequisite—the limited liability for landowners does not apply unless the burn boss has the required insurance coverage.[134] These provisions effectively mandate insurance for anyone seeking the benefits of Texas's liability shield.

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[129] *Id.* § 153.081 (limiting landowner liability if burn conducted by certified and insured burn manager); *id.* § 153.082 (requiring insurance policy of $1 million per occurrence and aggregate limit of at least $2 million to get liability limitation); *id.* § 153.084 (limiting liability of burn boss to required insurance except in cases of gross negligence or intentionally causing property damage, personal injury, or death).

[130] *See* sources cited *supra* note 129.

[131] FLA. STAT. § 590.125(3)(b)–(c) (2025).

[132] *See* KAREN HARDIGG, COUNCIL OF W. STATE FORESTERS, PRESCRIBED FIRE LIABILITY INSURANCE—CURRENT CONDITIONS & PATHWAYS FORWARD 2–3 (Sep. 2022), https://www.westernforesters.org/sites/default/files/2023-07/Prescribed%2520Fire%2520Liability%2520Insurance%2520Summary%2520September%25202022%2520with%2520branding.pdf [https://perma.cc/5DY5-X893].

[133] TEX. NAT. RES. CODE ANN. §§ 153.048(b)(4), 153.082, 153.084(b)(3).

[134] *Id.* § 153.082.

When government agencies partner with private burn associations or pay for burns through grants, they often require that the private party carry liability insurance.[135] This is a quasi-regulatory requirement tied to funding. Federal or state conservation grants that support prescribed burning on private lands often require the landowner or burn vendor to have insurance out of concern that the funding agency could otherwise be implicated in claims.[136] In Florida, the state wildlife agency has faced challenges finding contractors to burn on public land because it requires them to carry high-dollar liability policies—a demand that many contractors struggle to meet.[137] Thus, even without a universal state law saying "you must have insurance to burn," the practical reality is that many burn practitioners are compelled to obtain coverage either by statute or by the requirements of contracts, certifications, or permits.

But private landowners burning their own land without any formal certification are usually not legally required to have insurance. They proceed at their own risk. For instance, in Texas, a private landowner can conduct a burn on their property without using a certified, insured prescribed burn manager; doing so is legal (the statute explicitly says it "does not limit a landowner's right to conduct burns" on their own land), but if something goes wrong, that landowner will be judged under the ordinary negligence standard and have no special immunity.[138] In such cases, damages may be covered by a farm liability insurance policy or umbrella policy that covers fire damage. Some farm and ranch policies include coverage for accidental fires or even for prescribed burning if disclosed—typically via a "hostile fire" clause or endorsement.[139] Landowners must check their policies, as some policies exclude damage from intentional burning unless an endorsement is added.[140] Commonly, a general farm liability policy may have a pollution exclusion that can bar

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135 Daniel Godwin, *Prescribed Fire Liability Insurance: Unavailable, Unaffordable, and Vital*, N. COLO. FIRESHED COLLABORATIVE (July 25, 2022), https://nocofireshed.org/prescribed-fire-liability-insurance-unavailable-unaffordable-and-vital/ [https://perma.cc/MCA5-TTMW].

136 *Id.*

137 *Id.*

138 TEX. NAT. RES. CODE ANN. § 153.002.

139 M.L. Russell & T.D. Lashmet, *Prescribed Burning: Liability and Insurance Considerations*, TEX. A&M AGRILIFE EXTENSION, Aug. 2017, at 1, 4–5, https://gregg.agrilife.org/files/2015/06/Prescribed-Burning-Liability-and-Insurance-Considerations.pdf [https://perma.cc/QT5T-4K6Z].

140 *See, e.g.*, David Dybdahl, *A User's Guide to Liability Insurance for Controlled Burns and Wildfires*, AM. RISK MGMT. RES. NETWORK, LLC 1, 1 (Dec. 2023), https://www.pospba.org/wp-content/uploads/2024/11/A-Users-Guide-to-Liability-Insurance-for-Controlled-Burns-and-Wildfires_2023.pdf [https://perma.cc/W5T3-MXJU] ("With the introduction of wildfire exclusions, claims for causing Bodily Injury or Property Damage to third parties as a result of a wildfire are now specifically not covered under a Commercial General Liability insurance policy. Most off the shelf General Liability insurance policies will have wildfire exclusions in 2024 and beyond. Land stewards who use prescribed fire as a land management tool and the contractors that provide controlled burns services need highly specialized liability insurance and risk management strategies to address claims arising from wildfires, smoke, soot, and fumes.").

smoke damage claims, but a "hostile fire" exception to that exclusion can restore coverage for an out-of-control fire.[141] Also, where general commercial policies are involved, there is uncertainty about whether certain exclusions (e.g. business, pollution) apply.[142]

Insurance is not always available even where mandatory or desired, and even when available it is not always purchased.[143] Obtaining prescribed fire liability insurance has become increasingly difficult and expensive as insurance providers that once offered affordable coverage have pulled back due to what they perceive as escalating risk.[144] Reinsurance companies (which insure the insurers) have pressured carriers to reduce coverage in high-risk sectors after record wildfire losses in the West.[145] As a result, specialized prescribed burn insurance that was once a niche, low-cost product has seen premiums increase 300-400% in the past few years.[146] One experienced burn boss noted that liability insurance premiums for private forestry companies are now ten times what they were just four years ago.[147] Recent reports show premiums reaching $100,000 per year for $1 million of coverage in some western states.[148] For perspective, a contractor in the past might have spent just

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141 *See, e.g.*, Russell & Lashmet, *supra* note 139 (discussing complexities of pollution exclusions).

142 *See, e.g.*, Fla. Farm Bureau Gen. Ins. Co. v. Ins. Co. of N. Am., 763 So. 2d 429, 433–35 (Fla. Dist. Ct. App. 2000) (holding a motion to dismiss for failure to state a cause of action on exclusions inappropriate because of fact issues as to their applicability); *Miley*, 645 So. 2d 1166, 1167–69 (La. Ct. App. 1994) (disputing whether smoke was an occurrence under the terms of an insurance policy where the smoke did not cause damage, but did contribute to other occurrences).

143 Parajuli et al., *supra* note 21, at 972–73; *see also Making Liability Insurance Available to Qualified Prescriptive Burners*, WIS. PRESCRIBED FIRE COUNCIL (July 2022), https://prescribedfire.org/wp-content/uploads/2022/07/WIPFC_RXfire_Liability_Coverage_20220712.pdf [https://perma.cc/XE6S-NUFX] ("The lack of liability insurance is cited frequently as a major barrier to the increased use of prescribed fire."). One indication of the problem of securing adequate insurance is to compare earlier treatments of insurance costs. A 1997 study of the costs of prescribed burns noted that "most basic Farm Owner's Policies cover the legal liability aspects of prescribed burning if negligence is involved. Policy limits may range from $25,000 for a basic farm owner's policy to $500,000 for a complete umbrella farm owner's policy." Russell Stevens et al., *How Much Does It Cost to Burn?*, RANGELANDS, Apr. 1997, at 16, 19. The liability limits are well below what would be necessary today under most state regulatory regimes. *See, e.g.*, TEX. NAT. RES. CODE ANN. § 153.082 (West 2025) (requiring $1,000,000 per occurrence and at least $2,000,000 aggregate).

144 *See* Ashli Blow, *As U.S. Insurers Stop Covering Prescribed Burns, States and Communities Step Up*, MONGABAY (Nov. 15, 2023), https://news.mongabay.com/2023/11/as-insurers-stop-covering-prescribed-burns-states-and-communities-step-up/ [https://perma.cc/ED5Z-BRS4] (asserting that major wildfire disasters and rising payouts in the West have spooked insurers, even though prescribed burns have an excellent safety record). Some reports suggest that well over 99% of prescribed fires go as planned without any insurance claims. *Id.*

145 Godwin, *supra* note 135.

146 *Id.*

147 Blow, *supra* note 144.

148 *Id.*

$10,000 for the same insurance.[149] The effect is a chilling of prescribed fire usage just as states and communities are trying to increase it. A six-figure premium is unsustainable for many private burn contractors, nonprofit land trusts, or local burn associations. The cost of commercial insurance has led some commentators to recommend state subsidies.[150]

Compounding the issue, insurers that still offer coverage often impose strict limitations. Some will only insure burns in certain regions. For example, some companies will cover burns in the Southeast but exclude Western states.[151] From the insurer's viewpoint, the Southeast is a relatively predictable environment with a long track record, whereas Western states, due to media coverage of megafires, are seen as high-risk.[152] Some insurers prefer clients for whom burning is a minor part of their operations: there are cases where insurers declined coverage to a business that primarily does prescribed burning, yet would insure a rancher who only burns occasionally.[153] The counterintuitive result is that insurance is offered to less experienced burners because they only burn ten to fifteen percent of the time.[154]

These factors contribute to a significant insurance gap in some regions. Those insurers willing to write new coverage may quote extremely high premiums or low limits. The disparity has become so acute that Western burners are exploring creative solutions beyond the traditional insurance market. As mentioned, California and Colorado turned to state-backed funds.[155] Others have proposed other funding models for such funds as well.[156]

The insurance gap has impacted prescribed burn associations ("PBAs") and cooperatives, which are groups of landowners and volunteers who conduct burns on each other's properties, sharing labor

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149 *See id.* At least one company focused on forestry-related products offers insurance with "[p]rices. . . as low as $1,500 for $1,000,000 in coverage." *Affordable Prescribed Fire Insurance Now Available Through Forest Specialty*, FOREST SPECIALTY (2023), https://prescribedfire.org/wp-content/uploads/2023/01/FS-Information-P1.pdf [https://perma.cc/C55Y-4SEW].

150 *See, e.g.*, Parajuli et al., *supra* note 21, at 973 ("This warrants a provision of financial incentives (e.g., public cost sharing or tax breaks) to offset such insurance costs in order to not disproportionately impact less affluent landowners and burning practitioners.").

151 Godwin, *supra* note 135.

152 *Id.*

153 *Id.* ("The few insurance companies willing to underwrite fire liability insurance often will only look at organizations that dedicate less than 15% of their business to this work.").

154 *Id.*

155 Increased Prescribed Burns Act, Colo. SB 25-007 (2025); *see* CAL. DEP'T FORESTRY & FIRE PROT., FIRST-OF-ITS-KIND FUND PROVIDES SUPPORT AND PROTECTION FOR PRESCRIBED FIRE AND CULTURAL BURNING, REDUCING WILDFIRE RISKS IN CALIFORNIA, (June 19, 2023), https://34c031f8-c9fd-4018-8c5a-4159cdff6b0d-cdn-endpoint.azureedge.net/-/media/calfire-website/about/communications/june/prescribed-fire-claims-funds-news-release.pdf?rev=3fab87d20db9489ead84ca391e51c31c&hash=41179264963896A9616751A0FD38 AE0C [https://perma.cc/GF89-SNFF].

156 J. Morgan Varner et al., *Increasing Pace and Scale of Prescribed Fire via Catastrophe Funds for Liability Relief*, FIRE, Oct. 19, 2021, at 1, 4–5 (suggesting funds based on individual burner fees, government funding, private investment, or hybrid models).

and equipment. PBAs often operate informally, and many cannot afford a commercial insurance policy. To manage liability, PBAs use tools like waivers and mutual indemnification. For example, the Mt. Adams PBA in Washington has each member sign an agreement waiving any claims against fellow participants for accidental damage or injury, except in cases of gross negligence.[157] Also, the landowner hosting the burn agrees to indemnify the volunteer burners for any third-party claims, again except for gross negligence.[158] In essence, PBA members collectively accept the risks among themselves and try to shield individual volunteers from personal liability. This is a pragmatic approach when insurance is unobtainable, but it relies on trust and, ultimately, on the landowner's own resources if something goes wrong. Some PBAs have sought group insurance, but many insurers are wary of covering volunteer-based burns.[159]

The Texas legislature's Spring 2025 Session unanimously passed legislation creating a state burn insurance pool for "certified and insured prescribed burn managers."[160] The fund is authorized to have up to $25 million in public money and money charged to burn managers insured by it.[161] While the gap in the insurance market has meant that some burn managers have been unable to acquire insurance, the statute contains extensive regulatory provisions on the amount of the deductible (high enough to "deter the use of the self-insurance coverage for minor losses" and to "ensure the self-insurance coverage is used only for significant losses"), training, and minimum data collection.[162] The statute assigns administration of the fund to the Texas A&M Forest Service.[163] While a step in the direction of improving conditions for prescribed burns in Texas, this falls well short of the beneficial incentives a RRG would offer.

California created a similar scheme by creating a Prescribed Fire Claims Fund, providing up to $2 million in coverage per approved burn for private or cultural burn projects led by certified burn bosses.[164] This is an attempt to remedy the high cost of burn insurance. California's fund, a first-of-its-kind launched in 2022, serves as a backstop for losses and has been hailed as removing a "significant barrier" by effectively insuring practitioners where private insurance was lacking.[165]

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157 MOUNT ADAMS PRESCRIBED BURN ASS'N., ON MEMORANDUM OF AGREEMENT §10.2 (2024).

158 *Id.* §10.3.

159 *See* Sarah Evans, *Wildland Fire Contractor Insurance: Coverage, RXB2 Certification & Exclusions*, BANCORP INS. NEWS (Feb. 26, 2025), https://bancorpinsurance.com/wildland-fire-contractor-insurance-requirements/ [https://perma.cc/K9Z9-CEXL].

160 H.B. 2563, 89th Leg., Reg. Sess. (Tex. 2025).

161 *Id.*

162 *Id.*

163 *Id.*

164 Blow, *supra* note 144.

165 CAL. DEP'T FORESTRY & FIRE PROT., FIRST-OF-ITS-KIND FUND PROVIDES SUPPORT AND PROTECTION FOR PRESCRIBED FIRE AND CULTURAL BURNING, REDUCING WILDFIRE RISKS IN CALIFORNIA, (June 19, 2023), https://34c031f8-c9fd-4018-8c5a-4159cdff6b0d-cdn-endpoint.azureedge.net/-/media/calfire-website/about/communications/june/prescribed-fire-

D. Summary

The combined liability and regulatory regimes in most states attempt to balance encouraging prescribed burns with measures to reduce the risk of harm and provide funds to address harms that occur. However, there are three flaws that render them less effective than they might be. First, the precautionary measures mandated (in many cases) to obtain relief from liability are generally static. For instance, burn masters must be licensed; particular steps to minimize escapes, smoke, etc. are required; particular equipment must be present; particular weather conditions must be present; permits must be obtained; and so forth.[166] Training requirements are potentially dynamic, because new information can be added to trainings and will propagate through the network of burn masters and burn groups, but the incentives to produce new knowledge about burn techniques are external to the system. Universities, agricultural extension services, forest management agencies, and similar entities will produce new research based on their own incentives, and landowners and burn masters (both professional and non-professional) are often motivated to seek out the results of that research. Nonetheless, the system of burn regulation may not necessarily generate improvements in the conduct of burns but is dependent on the regulatory focus being on the correct areas, and being effective at changing behavior. Thus, second, to the extent requirements for liability protection are embedded in statutes, new knowledge will be costly to incorporate into the regulatory system since it will require amending statutes.[167] Moreover, as Pyne notes in his exhaustive history of fire in America, policy reform cannot solve the underlying causes of the mismatch between how we live and fire's role in the land.[168] Third, while requiring burners to purchase insurance commercially or providing state-backed alternative insurance funds addresses the potential for harm to third parties by attempting to ensure compensation will be available, the terms of the policies are either set by insurers not primarily concerned with prescribed burns (such business would make up only a tiny percentage of any insurer's portfolio of policies) or by state agencies or legislatures (for state-backed funds). Lack of expertise with burning among insurers prevents them from providing much feedback about best practices. Further, the fragmentation of claims data among multiple insurers limits

claims-funds-news-release.pdf?rev=3fab87d20db9489ead84ca391e51c31c&hash=41179264963896A9616751A0FD38AE0C [https://perma.cc/GF89-SNFF].

166 *See supra* Part I and Section III.C.

167 Parajuli et al. suggest that burn associations can potentially "catalyze modifications to prescribed fire statutes and regulations that reduce landowners' risks when applying prescribed fire." Parajuli et al., *supra* note 21, at 973. The advantage of RRGs is that they can directly incorporate those modifications into the insurance policies without the burden of lobbying for legislative action. *See generally supra* note 9 and accompanying text (describing RRGs as member-owned and thus exempted from much multi-state rate and form regulation).

168 PYNE, BETWEEN TWO FIRES, *supra* note 2, at 365.

the opportunities for learning from experience, as does the insurer's lack of knowledge of the conditions under which successful burns were conducted. Funds spent on the purchase of commercial policies are gone once the policy expires. In the next Part, I turn to how RRGs can address these problems.

IV. RISK RETENTION GROUPS FOR PRESCRIBED BURN LIABILITY

Reducing liability risk is an important step in encouraging increased use of prescribed burns.[169] Shifting the burden of losses to neighbors and passersby, however, leaves them to bear potentially large losses. Existing regulatory frameworks attempt to balance these problems by imposing requirements on landowners and burners (e.g., filing burn plans, obtaining permits, using certified burn bosses, etc.), requiring or providing liability insurance, and reducing liability for burns conducted in accordance with the rules.[170] This layering has not incentivized adaptive behavior as much as needed for more productive burns. What is needed is a system that incentivizes all involved to continue to adapt behavior to new knowledge and technology to maximize the net benefits from prescribed burns. RRGs provide a step toward such a solution because they provide three key components: (1) incentives for those conducting burns to adopt best practices; (2) compensation for those harmed by burns; and (3) incentives to continue to improve best practices.

In this Part, the Article outlines how a prescribed burn RRG would be created and operated and shows how it addresses each of these components.

A. RRG Structure and Operation

Unlike traditional insurance companies, RRGs are owned by the insureds, who are all engaged in similar activities or face similar liability exposures.[171] This distinctive ownership structure creates a mutual interest among members in minimizing risks and claims.[172] RRGs operate under a unique regulatory framework that allows them to be licensed in a single state while operating nationwide with reduced regulatory friction.[173] Once licensed in a domiciliary state (such as Vermont, which

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169 Kreuter et al., *Perceptions of Texas Landowners Regarding Fire and Its Use*, *supra* note 29, at 460 (survey of landowners concluded that "[r]educing legal liability . . . was the single most important measure for increasing the likely use of fire").

170 *See supra* Section III.B (detailing permitting, burn-plan filing, and certified-burner requirements, including Florida's approval and plan prerequisites and certified-burner statutes, and Washington's plan-based defense); *supra* Section III.C (noting mandated insurance for certified burn managers in Texas, agency and contract-driven insurance requirements, and state-backed funds in California and Texas).

171 Morriss, *Non-Territorial*, *supra* note 7, at 78.

172 *Id.* at 78–79.

173 *Risk Retention Groups*, NAT'L ASS'N OF INS. COMM'RS (Feb. 7, 2023), https://content.naic.org/insurance-topics/risk-retention-

has developed considerable market share and expertise in RRGs), a RRG can provide liability coverage to its members in every state without needing to satisfy each state's individual insurance regulations.[174] All members must be in the same risk category.[175] Prescribed burn practitioners could satisfy this requirement by banding together to form a RRG focused on prescribed fire liability. Federal law typically preempts state regulation of RRGs, which creates significant efficiency for groups facing multi-state liability concerns, such as prescribed burn associations that may operate across state lines.[176] RRGs can also often sell directly to members without being required to use an agent or broker.[177]

To establish a RRG, members must contribute capital, select a state of domicile, and create governance structures that comply with both the terms of the LRRA (largely focusing exclusively on insuring liability risks for members) and the domicile state's regulations (which address governance, capital adequacy, etc.).[178] The domiciliary state regulator sets the level and form of capital required and approves the RRG's

groups#:~:text=Last%20Updated%3A%202%2 F7%2F2023%20Issue%3A%C2%A0Risk%20 Retention,in%20any%20other%20state%20by [https://perma.cc/343U-XGG4]. Each non-domiciliary state can still require the RRG to register and pay premium taxes and can enforce certain financial responsibility and unfair claim practice laws. *See* NAT'L ASS'N OF INS. COMM'RS, RISK RETENTION AND PURCHASING GROUP HANDBOOK I-2 (2020). Some states have historically been hostile to RRGs, scrutinizing them or limiting their use in government contracts. *Id.* at II-11 (recognizing there "have been conflicting court rulings upon what is considered prohibited discrimination" committed by states under their authority to set "financial responsibility standards" for RRGs active within their borders). For example, a state law might say contractors must carry insurance from an "authorized insurer"—presenting a legal question as to whether an RRG counts as "authorized." *See, e.g.*, *id.* at II-16 (citing Nat'l Warranty Ins. Co., RRG v. Greenfield, 214 F.3d 1073 (9th Cir. 2000) (noting plaintiff sought declaration that, *inter alia,* "the phrase 'authorized insurer' in the [Oregon] Service Contract Act must be read to include RRGs")). Generally, LRRA would override a state law that discriminates against RRGs, but ambiguities can lead to disputes. *See id.* at II-11 ("It is evident from [Section 3905(d)] that the LRRA does not preempt, but leaves with the states, the authority to apply existing financial responsibility standards or to set new financial responsibility standards so long as those standards do not discriminate against [RRGs] within the meaning of the LRRA."). Additionally, if a state has a claims fund or special program (like California's), how a RRG fits into that environment might be unclear—for instance, asking whether using the state fund would also preclude the availability of RRG coverage needs to be worked out. *See id.* at I-2 (noting that commissioners of non-domiciliary states may notify "that guaranty fund protection does not apply").

174 Morriss, *Non-Territorial*, *supra* note 7, at 78–79.

175 *Id.* at 78.

176 NAT'L ASS'N OF INS. COMM'RS, *supra* note 173, at I-2 ("Under Section 3902 of the LRRA, with the exception of the domiciliary state, RRGs are exempt from all state laws, rules, regulations, or orders that would make unlawful, or would regulate…the operation of an RRG, except as provided in the LRRA.").

177 PowerPoint from Int'l Ctr. for Captive Ins. Educ., Risk Retention Groups, Session 2, Slide 7 (on file with Environmental Law).

178 Liability Risk Retention Act, 15 U.S.C. §§ 3901–3906; Morriss, *Non-Territorial*, *supra* note 7, at 78 (discussing formation of RRGs); *see also Risk Retention Groups: A Basic Overview*, CAPTIVE.COM (June 16, 2023), https://www.captive.com/articles/risk-retention-groups-a-basic-overview [https://perma.cc/6JZW-QZVS].

business plan.[179] Because of the expertise the primary domicile states have developed, they are able to match the capital requirements to the risks the RRG will bear.[180] New RRGs may use creative means to meet capital requirements while building their reserves, such as partnering with outside investors.[181] Once operational, the RRG collects premiums from its members, processes claims, and maintains the required reserves, typically using the services of an insurance manager for administrative tasks.[182] Crucially, any financial surplus remains the property of the members rather than flowing to external shareholders or corporate parents.[183] In practice, a RRG for prescribed fire would function by collecting premiums from members (landowners, contractors, PBAs) and using those funds to pay claims from escapes or smoke incidents. The premiums would be based on the individual insured's record and the group's collective loss history and risk factors.

In sum, RRGs offer a promising but complex path: they could restore access to liability coverage by allowing burners to self-insure collectively under federal protection. The LRRA's core purpose was to help groups facing liability insurance crises, and today's prescribed burn insurance crunch is analogous. By pooling many landowners/contractors from Texas, the Mountain West, and perhaps beyond, a RRG could spread the rare loss events over a wide base and set premiums closer to the true risk—rather than possibly inflated rates driven by insurer inability to distinguish good from bad risks among prescribed burners. To the extent that liability risks differ across states (for example, Texas burners may not want to pool risks with California burners), RRGs can make use of organizational structures like protected cell companies to segregate capital into multiple sub-pools.[184] However, establishing a RRG requires overcoming initial hurdles of capitalization and gaining trust from potential members.

B. Structure Advantages of RRGs

A RRG-based solution offers a wide range of advantages, including: control of policy terms by the members who are actually doing the burns;

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179 Morriss, *Non-Territorial*, *supra* note 7, at 78–79.

180 *Id.* at 83.

181 *Id.* at 78–79.

182 Gary R. Rimler, *Effective Strategies for Forming and Managing Risk Retention Groups*, CAPTIVE.COM (June 20, 2024), https://www.captive.com/news/effective-strategies-for-forming-and-managing-risk-retention-groups [https://perma.cc/8DLG-4KMF].

183 Jeremy Colombik, *How Does a Captive Insurance Company Work?*, CAPTIVE.COM (Nov. 20, 2019), https://www.captive.com/articles/how-does-a-captive-insurance-company-work [https://perma.cc/PH3J-LPJW] ("[W]ith an insured-owned captive insurance company, the captive owner(s) decide whether or not to retain or distribute the company's profits").

184 *See* Prabal Lakhanpal, *The Driving Forces Behind the Rise in Cell Captives*, SPRING COUNSELING GRP. (Aug. 2, 2022), https://www.springgroup.com/the-driving-forces-behind-the-rise-in-cell-captives/ [https://perma.cc/35KU-V7TB] (discussing usefulness of cell structures for RRGs).

retention by the RRG of premiums when claims are reduced; access to reinsurance markets for excess liability coverage; control of the claims process to ensure prompt payments; and collection of data that enables improvements in burn practice.

1. Incentivizing Information Gathering and Best Practices

RRGs offer a significant advantage for prescribed burn associations by creating strong incentives for gathering and sharing information about effective and safe burning practices. As demonstrated in the financial services sector, when entities have "skin in the game" through participation in a mutual risk-sharing arrangement, they develop mechanisms for collecting and distributing valuable operational data that might otherwise remain siloed.[185] This is particularly important in fire management, as "[i]t is a widely accepted tenet of contemporary landscape fire management practice that the adaptive management and monitoring cycle is an essential requirement for systematically guiding, evaluating and revising management performance."[186] Similar to how captive insurance companies (insurance companies owned by their insureds) have generally become "a focal point for internal expertise and external advisers within a purpose-built governance structure," a RRG for prescribed burners would be a repository of expertise about burn techniques, weather conditions, staffing requirements, and equipment specifications that minimize risk.[187] For example, one study found that including smoke forecasts and exposure impacts in the decision-making risk assessment improved health and safety outcomes.[188] A RRG focused on prescribed burns would be far more likely to take such matters into account than commercial insurers with tiny fractions of their business in prescribed burns. Because each participant's financial well-being depends on the group's overall performance, the RRG structure creates natural pathways for information flow that commercial insurance relationships typically do not facilitate.

The information-gathering function of a RRG extends beyond merely collecting data. RRGs typically establish methods to analyze claim patterns, identify emerging risks, and develop standardized best

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185 Andrew P. Morriss & Roger E. Meiners, *Regulating Entities, Not Activities: Reforming the Environmental Permit Raj*, 75 CASE W. RSRV. L. REV. 333, 354 (2024) ("[J]urisdictions seeking to attract regulated businesses behave differently from those that see themselves as merely gatekeepers."). *See also* William Wallace Covington, *Restoring Ecosystem Health in Frequent-Fire Forests of the American West*, 21 ECOLOGICAL RESTORATION 7, 8 (2003) (asserting that arguments about the use of fire and other techniques should be judged by proponents and critics' "amount of personal risk they have in the situation at-hand").

186 Jeremy Russell-Smith et al., *Adaptive Prescribed Burning in Australia for the Early 21st Century – Context, Status, Challenges*, 29 INT'L J. WILDLAND FIRE 305, 308 (2020).

187 Maria Ward-Brennan, *COVID-19 Economic Impact Strengthens Case for Captive Insurance, Says Dominic Wheatley*, CAPTIVE INS. TIMES (Apr. 7, 2020), https://www.captiveinsurancetimes.com/captiveinsurancenews/article.php?article_id=6818&page=&newssection=industry [https://perma.cc/ZK6C-QKDZ].

188 Kiely et al., *supra* note 28, at 5216.

practices.[189] For prescribed burning, this might include detailed protocols for weather monitoring, firebreak construction standards, staffing requirements based on burn complexity, and equipment specifications—all informed by the actual claims experience of the RRG's membership. Making use of insights derived from academic research—such as the connection between El Niño weather patterns, the number of summer burn days available in the U.S. southeast, and the wide interannual variation in available burn days—is an example of the type of insight a larger organization might be able to make available to members which individual burners and insurers who do not specialize in this product are less likely to have time to locate and digest.[190] Further, a large-scale RRG or network of smaller RRGs would be in a position to facilitate the type of intensive modeling necessary to develop a fuller understanding of the tradeoffs between prescribed burns and the larger wildfires that fire suppression often produces.[191] To the extent that appropriate burn policy can be determined only by testing and refining them in a "learning while doing" mode, as William Wallace Covington suggests,[192] RRGs provide a useful vehicle for ensuring that the learning takes place.

Adaptation of burning practice to changing conditions could also be enhanced by more extensive data collection and analysis. For example, changing demographics in areas using prescribed burns "have largely increased the need for prescribed burning (especially from the wildfire smoke and hazardous fuel level perspectives) while presenting hurdles to its application."[193] As a result, this requires "consideration of whether some of these [prescription] parameters might be moderately relaxed such that the opportunity for effective prescribed burning significantly increases while the associated risks are either reduced or remain within

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189 *See Why Choose a Risk Retention Group? Purpose, Characteristics, and Member Benefits*, NAT'L RISK RETENTION ASS'N (Apr. 2, 2025), https://www.riskretention.org/news/why-choose-a-risk-retention-group-rrg [https://perma.cc/4ZK4-YJLU].

190 *See generally* A. M. Chiodi et al., *An Analysis of Southeastern US Prescribed Burn Weather Windows: Seasonal Variability and El Niño Associations*, 27 INT'L J. WILDLAND FIRE 176, 177, 179, 184–87 (2018) (explaining the opportunity to utilize findings on the variability of seasonal weather conditions as a tool to navigate prescribed fire planning).

191 *See, e.g.*, Schollaert et al., *supra* note 28, at 135–37 (describing data needs and modeling necessary to compare fire control and fire use scenarios); Anna LoPresti et al., *Remote Sensing Applications for Prescribed Burn Research*, INT'L J. WILDLAND FIRE, May 24, 2024, at 1, 4–6 (describing remote sensing techniques that can assist in assessing prescribed burns); Kiely et al., *supra* note 28, at 5211–13 (describing modeling techniques for comparing wildfires and prescribed burns); Qi & Zhuang, *supra* note 28, at 8 (discussing tradeoffs in emissions); Brett Cirulis et al., *Quantification of Inter-Regional Differences in Risk Mitigation from Prescribed Burning Across Multiple Management Values*, 29 INT'L J. WILDLAND FIRE 414, 423 (2020) (describing "methodology for quantifying risk as a function of prescribed burning" that "incorporates inherent differences between landscapes in weather, fuel, asset arrangement and ignition patterns, and a [Bayesian network] that provides a quantitative basis for assessing risks to multiple management values").

192 Covington, *supra* note 185, at 8.

193 Andrew M. Chiodi et al., *Sensitivity of Prescribed Burn Weather Windows to Atmospheric Dispersion Parameters Over Southeastern USA*, 28 INT'L J. WILDLAND FIRE 589, 599 (2019).

our ability to adequately mitigate them."[194] Because climate change may "strongly impact future opportunities for prescribed burning, the risks faced by managers conducting burns, or both," developing better understanding of how weather conditions affect burns is important as well.[195]

2. Self-Policing and Peer Monitoring

One of the most powerful advantages of the RRG model is the self-policing mechanism it creates among members. In short, RRGs establish incentive-compatible arrangements where participants have strong motivation to monitor their peers' compliance with safety standards.[196] If burn associations share liability through a RRG, they will develop what can be called "professional co-regulation"—a system where each member has both the motivation and capability to ensure others are following best practices.[197] The "shadow of the future" looms large in these arrangements. Members know that lax standards by one participant could become tomorrow's premium increases for all.[198] This creates a powerful accountability structure that complements external regulation.

The self-policing capacity extends to membership decisions as well. Unlike commercial insurers, who may struggle to differentiate between high-quality and high-risk prescribed burn operations, a RRG comprised of burn professionals can better evaluate potential members based on their training, equipment, and operational history. A RRG, and captive insurers more generally, "must convince its regulator it has properly evaluated the risks it is insuring and is sufficiently capitalized to provide the coverage it is writing. It must then regularly demonstrate to its regulator that its plan is succeeding, requiring investing in data on both risks and efforts to reduce them."[199] These firms are highly incentivized

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[194] *Id.*

[195] John A. Kupfer et al., *Climate Change Projected to Reduce Prescribed Burning Opportunities in the South-Eastern United States*, 29 INT'L J. WILDLAND FIRE 764, 765 (2020). The authors predict that burn windows in the southeastern U.S. will decline significantly as a result of warming. *Id.* at 769–70. As a result, they suggest that "[m]ore aggressive exploitation of morning ignition times, non-traditional burning days (e.g. weekends and holidays), or technological assistance (e.g. unmanned aerial vehicles) may be needed to allow managers to maintain prescription windows and accomplish societal objectives in a warmer future." *Id.* at 776.

[196] *See* Morriss & Meiners, *supra* note 185, at 348 ("A system is 'incentive compatible' when each person acting in it has incentives to pursue his or her goals by acting in ways that promote the ability of all other individuals operating in the system to better achieve their goals, even if the details of individuals' goals differ.").

[197] *Id.* at 349 (noting the adoption of this kind of regulatory scheme "aligns the self-interest of the regulated with the socially beneficial behavior sought by the regulator").

[198] *Id.* at 349–50.

[199] Andrew P. Morriss, *Market Solutions to Large Number Environmental Problem-Induced Changes in Risk Distributions*, *in* CLIMATE LIBERALISM: PERSPECTIVES ON LIBERTY, PROPERTY AND POLLUTION 251, 263 (Jonathan H. Adler ed., 2023).

to develop a deep understanding of both the risks they face and how the measures their members take to reduce them can be made more effective.

3. Financial Advantages

RRG premiums can often be lower than those commercial insurers offer because there is no profit load, there can be less overhead, and because RRG members retain the financial resources they contribute if claims experience is favorable.[200] Traditional commercial insurance operates on a "use it or lose it" model—premiums paid are gone forever regardless of claims experience.[201] As explained earlier, the RRG model, in contrast, allows for the accumulation of capital over time if good practices result in minimal claims.[202] Rather than seeing insurance premiums as a sunk cost paid to commercial carriers, RRG contributions would remain within the control of the relevant burning community and could be reinvested in better equipment, training, or reduced contributions in future years.[203] This financial retention creates a virtuous cycle: effective risk management leads to fewer claims, which produces financial savings, which can then be reinvested in better risk management practices. The structure transforms insurance from a pure cost center into a potential source of funding for safety improvements. For prescribed burn associations operating on tight budgets, this financial efficiency can make the difference between a sustainable program and one that cannot afford to continue operations.

Moreover, a RRG for prescribed burning could pool the risk of those conducting burns in multiple states, creating a larger, more diversified base than any single-state pool. A single-state-level insurance pool may not be viable if the number of burners in that state is small, but a larger, cross-state pool could achieve the scale needed to stabilize premiums. A

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[200] Essentially, the members would be insuring themselves as a group. If the group truly believes in the <1% escape risk and their own skill in managing burns, they could end up paying far less in premiums (pooled) than the current $100,000 quotes, because they would not be pricing in the fear of worst-case disasters to the same degree that outside insurers are.

[201] For example, as the Public Utilities Commission of the State of California explains:

> [F]or commercial insurance . . . the insurers generally keep the premiums paid, regardless of the number of claims ultimately made against the policy. Under this 'use it or lose it' paradigm, in a year with relatively low claims submitted to the insurer for reimbursement, customers are potentially leaving third party insurers with hundreds of millions of dollars in excess premiums.

Application of Pac. Gas & Elec. Co., No. A.21-06-021, at 6 (Cal. Pub. Utils. Comm'n 2025) (Grant of Joint Petition for Modification of Decision 23-11-069 Regarding Non-Wildfire Liability Insurance).

[202] *See supra* text accompanying note 10 ("Because members own RRGs, any surplus (the reserves left when claims are fewer or smaller) belongs to them, incentivizing them to reduce risk."); *supra* text accompanying note 183 (explaining that "any financial surplus remains the property of the members rather than flowing to external shareholders or corporate parents").

[203] Rimler, *supra* note 182.

RRG would allow forming such a cross-state pool despite protectionist insurance regulation in most states that seeks to regulate the terms, conditions, and prices of insurance within each state. States cannot impose their normal insurance regulations on out-of-state RRGs beyond some limited oversight; the LRRA preempts any state law that would prohibit or regulate the operation of a RRG in interstate commerce.[204] This means, for example, a RRG formed by a coalition of burn associations in Texas and Oklahoma could issue liability policies to members in both states, and neither state could require the RRG to be licensed as a traditional insurer or to comply with local rate/form filing laws so long as it was registered in some state. This does not mean RRGs are unregulated. RRGs are insurance companies, regulated by their domiciliary state's insurance commissioner much like a normal insurer (with some differences such as being allowed to use GAAP accounting and not being in guaranty funds).[205] Like other insurers, they must meet capital requirements and file financial statements with the domiciliary state.[206]

4. Specialized Expertise and Tailored Coverage

RRGs develop expertise in niche liability areas that commercial insurers often do not understand well.[207] The recent increases in liability insurance policies for burners are a sign of the type of pricing-risk mismatch that can occur when large market players do not well understand a specialist risk. One RRG consultant explained that RRGs often serve "the liability coverage needs of those operating in business sectors considered by the traditional insurance marketplace to be 'non-standard.'"[208] These are generally "classes which the traditional market

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[204] NAT'L ASS'N OF INS. COMM'RS, *supra* note 173, at I-2.

[205] One important caveat is that non-domiciliary states ensure RRG policies are not backed by state insurance guaranty associations. Morriss, *Non-Territorial*, *supra* note 7, at 80. Therefore, if the RRG becomes insolvent, claimants cannot turn to a state guaranty fund for payment—a risk members and insured parties must acknowledge. *See* NAT'L ASS'N OF INS. COMM'RS, *supra* note 173, at III-6 ("The LRRA provides that RRGs cannot be members of guaranty funds. Therefore, there is no guaranty fund for protection for RRG members."). This makes careful actuarial planning and reinsurance critical for a RRG insuring potentially catastrophic fire liabilities.

[206] *See, e.g.*, Morriss, *Non-Territorial*, *supra* note 7, at 89 ("For example, as a result of NAIC efforts, RRGs generally now report quarterly to their domiciliary regulator, must meet financial solvency ratios similar to (but not often identical to) those applied to traditional insurers, and meet minimum capital and surplus requirements.").

[207] *Risk Retention Groups Owning Up to Success*, INS. J. (Jan. 27, 2003), https://www.insurancejournal.com/magazines/mag-coverstory/2003/01/27/25880.htm [https://perma.cc/4QL2-NEDA] (quoting CEO of an RRG ensuring nonprofits that "[a]s a RRG you must write organizations that are of a similar type, so you're forced to really understand and serve that particular niche because that's all you do").

[208] Barney Dixon, *RRGs: The Benefits of an Alternative Risk Solution*, CAPTIVE INS. TIMES (Mar. 2023), https://www.captiveinsurancetimes.com/specialistfeatures/specialistfeature.php?specialist

has a class bias against, mainly because when they have tried to write them they've gotten it horribly wrong from the underwriting expertise, coverage provision and claims handling perspectives."[209]

Most importantly, the RRG would determine its terms of coverage so the terms could be tailored to the needs of burners. For instance, the RRG policy might explicitly cover smoke liability (which some commercial policies exclude) and might cover volunteer participation and multi-landowner burns, which are scenarios sometimes not well addressed by standard policies. Moreover, the RRG would administer the claims process, allowing it to resolve claims more effectively.[210] Moreover, any surplus (profit) the RRG accumulates in good years stays in the group's reserves or can be returned to members, rather than being profit for an insurance company.

The ophthalmology profession provides an example: the Ophthalmic Mutual Insurance Company (OMIC), a successful RRG, became the largest insurer of ophthalmologists by developing specialized knowledge of the field's unique risks.[211] Liability for prescribed burns is precisely the type of problem for which the deep knowledge a RRG would develop would deliver benefits, including factors such as:

- Weather conditions that increase escaped fire risk;
- Optimal burn area size for specific conditions;
- Vegetation types and their specific burn characteristics;
- Equipment failures that commonly lead to loss events;
- Human factors that contribute to prescribed burn accidents; and
- Effective mitigation techniques for different ecosystems and burn scenarios.

A RRG would be better positioned than state agencies or commercial insurers to develop this expertise because it would be in possession of the flow of claims data from its members and in a position to collect additional data on burns that did not produce claims.[212] There are, however, data issues with existing records of burns.[213] Much of the data that does exist

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_id=369&navigationaction=features&newssection=features [https://perma.cc/6QRE-5HLK].

209 *Id.*

210 *Risk Retention Groups Owning Up to Success*, *supra* note 207 (quoting an RRG CEO saying, "[w]hen we handle claims and when we work with our members, we're on the same side. We don't have that adversarial relationship that so frequently exists between policyholders and the company. I think that's a real plus. It helps us to get better resolutions to claims than if there was an adversarial relationship with our policyholders").

211 Morriss & Meiners, *supra* note 185, at 352.

212 Existing permit data is inadequate in some areas. *See, e.g.*, Afrin & Garcia-Menendez, *supra* note 28, at 2 (noting Georgia Forestry Commission permits "do not include geographic coordinates, and the level of detail in recorded addresses varies widely" compared to Florida permits which include coordinates).

213 *See, e.g.*, Huang et al., *supra* note 28, at 2 ("Permit records [in Georgia] do not contain accurate start times and durations for most burns."); Sadia Afrin & Fernando Garcia-Menendez, *Potential Impacts of Prescribed Fire Smoke on Public Health and Socially Vulnerable Populations in a Southeastern U.S. State*, SCI. TOTAL ENV'T., June 26, 2021, at

is opaque to commercial insurers. For instance, one study found that across 23,000 burns surveyed, there was only one insurance claim over a five-year period and it was under $5,000.[214] If more comprehensive data can be centrally collected, it can help make the case to insurance regulators for a RRG to charge reduced premiums.

This specialized knowledge facilitates the development of coverage terms specifically designed for prescribed burning operations, rather than forcing prescribed burners to adapt to standardized general liability policies that may contain inappropriate exclusions or limitations.[215] The RRG can create policy language that recognizes the legitimate practices of prescribed burning while still maintaining appropriate coverage for negligent acts and random events.

5. Regulatory Advantages and Stability

The RRG model provides regulatory advantages that are particularly valuable for prescribed burning operations, which often face shifting regulatory landscapes. Unlike commercial insurers who may exit markets or drop certain lines in policies, such as liability from prescribed burns, when regulatory conditions change, a RRG has a vested interest in adapting to new regulatory requirements rather than abandoning its members.[216] Vermont's captive insurance regulatory system demonstrates how specialized regulation can enable businesses to address risks through "providing a means of coordinating risk management" rather than merely shifting risks to third parties.[217] Similarly, a RRG for prescribed burners would create stronger internal advocates for navigating complex regulatory requirements while maintaining affordable coverage options.

The stability provided by a RRG also contrasts favorably with the "hard/soft" cycle of commercial insurance markets. Commercial liability insurance frequently experiences periods of tight capacity and high prices ("hard markets") followed by periods of abundant capacity and lower

1, 8 (noting discrepancies in data in even high-quality records in Georgia). In addition, there is an absence of data examining the effects of efforts like prescribed burning on population exposures to smoke. Schollaert et al., *supra* note 28, at 131.

214 John R. Weir et al., *Prescribed Fire: Understanding Liability, Laws and Risk*, OKLA. COOP. EXTENSION SERV., Mar. 2020, at 2 tbl. 1, https://extension.okstate.edu/fact-sheets/print-publications/nrem/prescribed-fire-understanding-liability-laws-and-risk-nrem-2905.pdf [https://perma.cc/XZ97-66RX].

215 *A Guide to Risk Retention Groups (RRGs)*, STRATEGIC RISK SOLS. 2, https://www.strategicrisks.com/wp-content/uploads/2024/04/Risk-Retention-Groups.pdf [https://perma.cc/G3Y4-HLH7] (last visited Oct. 6, 2025) ("RRGs offer members the flexibility to design insurance policies that specifically address their risks and needs. This customization allows the RRG to provide more comprehensive coverage and better protection.").

216 *Risk Retention Groups Owning Up to Success*, *supra* note 207 (referencing a RRG's capability to represent long-term stability—providing predictable rates and terms—in addition to a homogenous insight into the applicable industry).

217 Morriss & Meiners, *supra* note 185, at 355.

prices ("soft markets").[218] These fluctuations can make long-term planning difficult for prescribed burn operations. A RRG, owned and controlled by its members, provides greater stability in pricing and coverage availability.[219]

6. Potential Disadvantages

The key obstacle is the cost of the capital and expertise needed to start a RRG. Creating one requires upfront funding to cover reserves and regulatory capital (likely hundreds of thousands or a few million dollars), service providers like actuaries, attorneys, and claims administrators, and a commitment from enough members to make it viable.[220] The prescribed fire community would need to organize and perhaps partner with an existing captive insurance manager to launch a RRG. There are precedents in analogous fields: for instance, farmers for certain agricultural liabilities.[221]

C. How it Might Work

Facts from two scenarios related to prescribed burns show how a RRG solution might work.

1. Wind Shifts

In *Jordan v. Stevens Forestry Services, Inc.*,[222] a prescribed burn was initiated on forest land.[223] The parcel to be burned was surrounded on the east by a cleared pipeline right of way, on the west by a creek that "served as a natural fire break," on the south a tract that had been burned two

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[218] *See Market Conditions: Cycles and Costs,* INS. INFO. INST., https://www.iii.org/publications/commercial-insurance/how-it-functions/market-conditions-cycles-and-costs [https://perma.cc/9EVL-JQ2N] (last visited Oct. 8, 2025) (describing the "hard" and "soft" market conditions of the "property/casualty (P/C) insurance industry cycle").

[219] Dixon, *supra* note 208; *Risk Retention Groups Owning Up to Success*, *supra* note 207.

[220] *See* Rimler, *supra* note 182.

[221] *See, e.g., How to Cancel Agri Insurance Exchange Risk Retention Group Car Insurance,* FREEADVICE.COM (Sept. 27, 2023), https://www.freeadvice.com/insurance/how-to-cancel-agri-insurance-exchange-risk-retention-group-car-insurance/ [https://perma.cc/9QCR-UG8A] ("Agri Insurance Exchange Risk Retention Group car insurance offers a range of features that cater to the unique needs of farmers and ranchers. These features go beyond the standard coverage provided by traditional car insurance policies and are specifically designed to address the risks associated with farming operations."). California explored creating a statewide insurance risk pool for prescribed fire but found too few policies to be viable within the state—that conclusion is what led to the claims fund approach. *Prescribed Fire Liability Claims Fund Pilot*, CAL. WILDFIRE & FOREST RESILIENCE TASK FORCE, https://wildfiretaskforce.org/prescribed-fire-liability-claims-fund-pilot/ [https://perma.cc/CA75-Q89R] (last visited Oct. 6, 2025) (explaining the pilot is operational until January 1, 2028, with $20 million allocated for covering up to $2 million in losses from a prescribed burn led by a qualified burner).

[222] Jordan v. Stevens Forestry Services, Inc., 430 So. 2d 806 (La. Ct. App. 1983).

[223] *Id.*

weeks earlier and so had no fuel, and on the north a newly ploughed fire lane.[224] "Under normal conditions these natural and artificial barriers would serve to totally contain the fire [the burner] ignited."[225] The burner had fifteen years of experience and checked local weather conditions, finding a light wind from the west.[226] "The normal weather pattern in the area at the time would have called for a clockwise rotation, if any, in the wind direction, according to [the burner]."[227] Unfortunately, "the wind suddenly shifted, in a counter-clockwise direction, and began blowing hard from the south."[228] This northerly wind pushed the fire over the ploughed fire lane and onto the neighboring properties, where it burned a substantial amount of timber.[229]

In *Schmierer v. Weisharr*, the Washington Court of Appeals, in analyzing how to assess the alleged negligence of the landowner setting a prescribed burn, summarized the issues with respect to the wind that pushed the fire onto the neighboring property as: 1) how likely was it that wind that strong would rekindle a fire extinguished the day before; 2) how likely was it that such a wind would arise while the possibility of rekindling remained; and 3) if continued vigilance was called for, what was a reasonable duration for that vigilance.[230] All these were questions which placed this case beyond resolution by summary judgment.[231]

This case illustrates the difficulties in determining liability under a negligence standard. Even if the burner ultimately prevails in a trial, the costs of litigation are likely to be substantial.[232]

How might a RRG handle this situation? First, the RRG would be in control of the claims process. Since the RRG would be controlled by its members, it would focus on protecting the members, making a settlement more likely. Second, the RRG would have an incentive to adapt to claims made under such circumstances by requiring members to make use of the advanced weather forecasting techniques now available.

For example, a commercial provider (Benchmark Labs) provides point-specific microclimate weather forecasting using a combination of commercially available data and data from weather monitors on its clients' properties.[233] These forecasts have provided up to seventy to

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[224] *Id.* at 809.

[225] *Id.*

[226] *Id.* at 807.

[227] *Id.* at 809.

[228] *Id.* The court affirmed the verdict for the plaintiff but reduced the damages by finding that a treble damages penalty that applied to willful cutting or removing trees across a property line. *Id.* at 809–10.

[229] *Id.* at 809.

[230] *Schmierer*, No. 18230-4-III, 2000 WL 255704, at *5 (Wash. App. Mar. 7, 2000).

[231] *Id.*

[232] McCullers argued that Florida needed to amend its law to "[protect] practitioners from liability when unforeseen accidents occur," implicitly endorsing leaving losses on the victims in these cases. McCullers, *supra* note 57, at 594.

[233] Teleconference Interview with Ulrik Soderstrom, Chief Strategy and Operations Officer, Benchmark Labs (Apr. 21, 2025). *See also* LoPresti et al., *supra* note 191, at 11–15 (describing the potential of remote sensing in assisting the assessment of prescribed burns

eighty percent error reduction in relative humidity forecasts, a crucial variable for determining if a prescribed burn is appropriate.[234] Similarly, Grayback Forestry uses thermal imaging on drones post-fire to document that a burn was conducted without a problem.[235]

Benchmark Labs currently works with TNC on fire forecasting for its properties, including assisting with monitoring and forecasting conditions for prescribed burns.[236] These are large organizations, operating at a considerable scale (over 300,000 acres for The Nature Conservancy).[237] A Prescribed Burn RRG could have sufficient membership to reach the scale where working with firms like Benchmark Labs or Grayback Forestry would be feasible, while most family farms and ranches would be unlikely to afford to do so.

2. Burn Associates as Members

Some researchers have suggested collaborative conservation partnerships as a way to provide "an organizational structure within which biases in the prescribed burn regime [against burns] … could be counteracted."[238] Similarly, others have recommended the purchase of insurance through prescribed burn associations.[239] The prairie-landowner-led prescribed burn associations have used burns to restore grasslands and prevent woody plant encroachment.[240] Moreover, incentivizing greater organization among burn associations (by providing the reward of RRG membership) may assist them in lobbying nearby exurban populations to adopt measures to minimize damages if a fire does escape.[241]

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and concluding that "remote sensing offers the opportunity to monitor and evaluate fire at unprecedented spatial and temporal scales"); Katherine Petralia & Mark Potosnak, *Particulate Matter Production from Prescribed Burns in the Chicagoland Area*, 7 FIRE, Oct. 25, 2024, at 1, 2–5 (describing the use of low cost air quality monitors to improve data on impact of burns); Olivia Sablan et al., *Quantifying Prescribed-Fire Smoke Exposure Using Low-Cost Sensors and Satellites: Springtime Burning in Eastern Kansas*, GEOHEALTH, Apr. 2024, at 1, 2–3 (same).

234 Benchmark Labs, Case Studies (on file with author). Benchmark Labs provides 15-day hourly forecasts for temperature, relative humidity, wind direction and speed, cloud cover, UV index, precipitation, and evapotranspiration. *Id.*

235 Blow, *supra* note 144.

236 Teleconference Interview with Ulrik Soderstrom, *supra* note 233.

237 *Id.*

238 Costanza & Moody, *supra* note 25, at 13.

239 Parajuli et al., *supra* note 21, at 973.

240 Andria Hautamaki, *How These Neighbors Use Fire to Revitalize Their Communities, and Land*, NPR (June 7, 2022, 6:06 AM ET), https://www.npr.org/sections/pictureshow/2022/06/07/1101257256/neighbors-use-prescribed-fire-to-restore-great-plains-grasslands [https://perma.cc/2R7P-LXAS]; Dirac Twidwell et al., *The Rising Great Plains Fire Campaign: Citizens' Response to Woody Plant Encroachment*, 11 FRONTIERS IN ECOLOGY & ENV'T (ONLINE SPECIAL ISSUE: PRESCRIBED BURNING) e3, e64 (2013).

241 *See, e.g.,* PYNE, BETWEEN TWO FIRES, *supra* note 2, at 364 (noting that fires pose "a potential threat to communities, especially those that had not adopted measures to protect themselves—had not enforced building codes, had not designed subdivisions with fire as a

A RRG approach would work well in cases like this where there are existing membership organizations that could be part owners of the RRG. In contrast to the use of state-subsidized insurance, the use of RRG-based insurance would leave the associations with the money they spent, given their exemplary record. These funds would be available to reduce future premiums, increase the RRG's capacity to insure, or be refunded to members.[242] If a RRG is organized around burn associations, this would incentivize the formation of such associations, which would both bring the members up to the standards of the association and itself increase the likelihood of member participation in burns.[243]

V. CONCLUSION

In a provocative 2001 essay, biology professor Stephen Pyne described what he termed "an impressive litany of failures" of prescribed burning, both escapes and "fires that simply don't do the job they should."[244] The reasons for these failures, he asserted, "are legion" – "[l]iability law, smoke, threats to endangered species and cultural resources, complicated land ownership, narrow 'windows' for burning, insecure expertise, competing purposes, lands overstuffed with fuels."[245] Most importantly, he cautioned that "a prescribed burn is not a vaccination, a one-off inoculation against conflagration. It typically involves a series of burns, often with complex preparations, then repeated in perpetuity."[246]

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consideration, had not founded a fire service, had not treated developments as what they were, bits of town with exotic landscaping"). There is considerable evidence to support the idea that defensive measures are effective.

> Postfire studies suggest that a nonwooden roof increases the chances of structural survival from 19 to 70 percent. Clearing flammable shrubs thirty feet around the structure improves the odds from 15 to 90 percent. If, in addition, a firefighter is present—which requires adequate water sources and road access—a house is 99 percent defensible even under extreme conditions. But these are precisely the measures habitually ignored by the public.

STEPHEN J. PYNE, WORLD FIRE: THE CULTURE OF FIRE ON EARTH 231 (Univ. Wash. Press 1997).

242 *See generally supra* text accompanying note 10 (explaining that "[b]ecause members own RRGs, any surplus (the reserves left when claims are fewer or smaller) belongs to them, incentivizing them to reduce risk"); *supra* text accompanying note 183 (explaining that "any financial surplus remains the property of the members rather than flowing to external shareholders or corporate parents").

243 Kreuter et al. surveyed that south plains landowners that belonging to a burn association were 281% more likely to engage in burns on their own land and 578% more likely to assist on burns on others' property—strong evidence that organizations that assist landowners with learning and conducting burns encourage landowner participation in burns. Kreuter et al., *Landowner Perceptions*, *supra* note 30, at 964.

244 Stephen J. Pyne, *The Perils of Prescribed Fire: A Reconsideration*, 41 NAT. RES. J. 1, 2–3 (2001).

245 *Id.* at 3.

246 *Id.* at 5.

The RRG model offers prescribed burn associations a powerful tool for addressing liability concerns while simultaneously improving safety, knowledge sharing, and financial efficiency. By creating incentive compatibility between individual burners and the broader burning community, RRGs transform what would otherwise be an adversarial insurance relationship into a collaborative risk management partnership. Perhaps most importantly, the RRG model would encourage local variations in fire practices by marrying the provision of the insurance necessary in an environment where the risks of fire are growing as exurban populations increasingly move into rural landscapes to local organizations as RRG members, while incentivizing them to develop the local knowledge necessary to limit liability.[247]

The successful application of the RRG model in other specialized liability contexts suggests it would be particularly well-suited to prescribed burning. The combination of incentive-compatible regulation, information gathering and sharing, self-policing mechanisms, financial retention, specialized expertise, and regulatory stability addresses many of the core challenges facing the prescribed burning community in managing liability risk.

By embracing the RRG model, prescribed burn associations can not only secure more appropriate and stable coverage but also create an institutional framework that continuously improves safety practices and operational effectiveness. This approach does not just help prescribed burn associations obtain coverage, it fundamentally improves how they manage risk and conduct operations. As Varner et al. concluded, "[w]ithout addressing [liability and compensation issues] with coordinated policy, it will not be possible to reduce risks and increase resilience of fire-prone ecosystems."[248] RRGs offer a means to do so.

APPENDIX: ACTION PLAN FOR CREATING A RRG FOR BURN ASSOCIATIONS

Objective: Establish a Risk Retention Group (RRG) in Vermont specifically designed to manage liability risks associated with prescribed burning, leveraging Vermont's robust regulatory framework, experienced oversight, and credibility within the industry.

Phase 1: Feasibility and Planning (Months 1-3)

Step 1: Exploratory Committee Formation

- Assemble a committee with:
    - At least two representatives from active prescribed burn associations

247 PYNE, BETWEEN TWO FIRES, *supra* note 2, at 357 ("The wildland-urban interface, not timber, became the challenge to fire protection.").

248 Varner et al., *supra* note 156, at 8.

  - A Vermont-approved captive insurance manager
  - An insurance professional with RRG-specific experience
  - A legal advisor familiar with Vermont captive laws
  - An actuary or financial analyst experienced in Vermont's captive insurance standards
- Schedule meetings to discuss progress, define roles, and maintain accountability

Step 2: Needs Assessment and Feasibility Study

- Conduct comprehensive surveys of prospective member associations to identify:
  - Existing liability coverages, premiums, and claims history (past 5-10 years)
  - Unique coverage needs specific to prescribed burns
  - Current risk management protocols and potential enhancements
- Complete an actuarial feasibility study, including:
  - Projected member base and premium revenues
  - Initial capital requirements (Vermont minimum: $1,000,000)
  - Estimated claims frequency and severity based on historical data
  - Operational and administrative cost projections

Step 3: Regulatory Research and Selection

- Confirm Vermont as the domicile based on the following comparative advantages:
  - Robust governance standards, enhancing member confidence
  - Credibility and widespread regulatory acceptance
  - Transparent and comprehensive regulatory support
- Conduct a detailed review of Vermont's captive application process and requirements

Phase 2: RRG Formation and Regulatory Approval (Months 4-6)

Step 1: Legal Structure and Governance Setup

- Engage specialized Vermont legal counsel to draft:
  - Articles of incorporation
  - Bylaws detailing board structure, independent director requirements (Vermont mandates majority independent directors), and governance procedures
  - Membership eligibility and operational protocols

Step 2: Capitalization

- Secure required initial capitalization of at least $1,000,000 (cash or approved instruments)
- Develop a structured capital contribution plan for member equity and solvency compliance

Step 3: Regulatory Filing

- Prepare and submit Vermont captive insurance licensing application including:
    - Detailed business plan and feasibility study
    - Financial projections, actuarial analysis
    - Biographical affidavits of all directors and officers
    - Vermont-specific governance documents (audit committee charter, ethics guidelines)
- Budget for Vermont's $6,000 actuarial review fee and $500 application fee

Phase 3: Operational Infrastructure and Policy Development (Months 7-9)

Step 1: Policy and Underwriting Guidelines

- Develop specialized liability policy forms tailored to prescribed burning operations
- Implement comprehensive underwriting guidelines emphasizing:
    - Member certification and qualification requirements
    - Safety and documentation protocols
    - Risk management standards and compliance expectations

Step 2: Operational Systems

- Establish efficient systems for policy administration, underwriting, and claims management (either outsourced or in-house)
- Create risk management and incident-reporting systems, leveraging Vermont's standards

Phase 4: Launch and Early Operations (Months 10-12)

Step 1: Policy Issuance and Member Onboarding

- Conduct initial underwriting reviews and issue policies to qualifying founding members
- Communicate clearly defined premium structures and payment procedures

Step 2: Monitoring and Continuous Improvement

- Implement structured feedback mechanisms for ongoing policyholder engagement
- Adjust underwriting, risk management, and policy conditions based on initial feedback
- Position the RRG as a leader in prescribed burn safety and risk management through active participation in industry forums and continuous research initiatives